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ABSTRACT

The project was designed to develop a data interface system which would (1) improve the quality of vocational data, (2) provide vocational data in a more timely manner, (3) provide meaningful analyses of data (particularly in the worker demand-supply area), and (4) provide the capability of interacting different data bases. Procedures were developed for collecting supply data from public vocational schools, institutions of higher learning, apprenticeship training, migration, government organizations, and private schools. A committee of subject area specialists developed an interface of supply and demand data. A data-based management system was selected and tested for interactive data interface. Major results included (1) development of the ability to interact data bases using standardized codes and a commercial data based management system which provides both batch and interactive access to most vocational data bases; (2) state and local administrators approval and use of the system from both data provider and data user standpoints; and (3) a management consulting group's agreement that the system meets most administrative data needs. Recommendations included that some bottom line type of analysis such as linear programming or simulation be developed to achieve even better usage of Colorado's vocational data bases. (BL)

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Final Report

Project No. 498AH50034
Grant No. G007500335

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A DESIGN OF AN INTERACTIVE INTERFACE SYSTEM FOR FIVE COMPONENTS OF A COMPREHENSIVE MANAGEMENT INFORMATION SYSTEM IN COLORADO

June 30, 1977

U S DEPARTMENT OF HEALTH.
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Bureau of Occupational and Adult Education

CE 012 336

ABSTRACT

STATEMENT OF THE PROBLEM

This project was designed to develop a data interface system which would (1) improve the quality of vocational data, (2) provide vocational data in a more timely manner, (3) provide meaningful analyses of data (particularly in the worker demand-supply area), and (4) provide the capability of interacting different data bases.

PROCEDURES

Using a variety of local and state advisory committees, public institution vocational data collection procedures were developed and implemented. These procedures were customized to fit the needs and capabilities of different institutions. Standard coding and definitions, flexible data collection procedures, and a concentration on essential data were features of the systems developed.

Arrangements were made with five Colorado institutions or agencies for the collection of supply data on higher education, apprenticeship training, migration, government organizations, and private schools. In addition, a test survey of industry to determine what formal training in that sector was conducted.

The Colorado Employment Security Agency provided manpower demand data. This data was developed using UI account data, OES data, and the Bureau of Labor Statistics Matrix Approach. The data was checked by various certification or licensing agencies which dealt with controlled occupations, and changes were made where necessary.

A committee of subject area specialists developed an interface of supply and demand data. The interface was bi-level in nature with both direct and related comparisons presented.

Training station data was collected and was examined for excessive numbers of vacant stations in given types of programs. Developing a common definition proved to be a major problem.

The definition and collection of common cost data was the subject of meetings with state and local administrators. These experts attempted to find an approach to collecting comparable data from a wide variety of institutions.

A data based management system was selected and tested for interactive data interface using Colorado vocational information. Extensive programming was completed for batch mode data interfaces. A hand interface system was developed for worker demand and supply data.

RESULTS AND FINDINGS

Major Results

1. Colorado improved the quality of its vocational education data base by (a) identifying necessary data elements, (b) designing and implementing data collection systems which emphasize the present capabilities of data suppliers, (c) standardizing codes and definitions, and (d) establishing data control and editing procedures.

2. Colorado improved the timeliness of vocational data reports by establishing a series of systems for quick preparation and access of data bases.

3. Colorado identified over 100 data analyses (standard reports) which are now required by data users on a continuing basis (chief among these is the worker demand-supply report).

4. Colorado developed the ability to interact data bases using standardized codes and a commercial data based management system which provides both batch and interactive access to most vocational data bases.

Data Based Findings

1. Colorado has a rather traditional public vocational program mix.
2. Private training in Colorado concentrates in exotic or traditional programs.
3. Net in-migration covers a wide range of occupations in Colorado, and there is relationship between the number of available jobs and the job skills of workers who in-migrate.
4. Formal preparatory industrial training in Colorado is minimal.
5. Apprenticeship training concentrates in traditional occupations where unions are strong.
6. Higher education produces large numbers of students with vocational skills who compete for jobs with vocational students.
7. Government organizations train large numbers of public service workers in the protection and health areas.
8. The vast majority of future job openings in Colorado will be in traditional occupations.
9. There are some large discrepancies between supply and demand for some occupations in Colorado although the majority of demand and supply interfaces indicate that vocational education is preparing workers for jobs that will exist when students seek employment.
10. Head count enrollment in Colorado vocational programs usually exceeds the number of training stations due to the replacement of dropouts and flexible scheduling.
11. Program costs fluctuate dramatically due to a wide variety of factors such as teacher salary, transportation cost, etc.

Procedural Findings

1. Using data collection systems developed by local administrators generates more accurate data bases in a shorter time frame.

2. Non-vocational government agencies can and are happy to cooperate in the preparation of a worker demand-supply interface.
3. Using a commercial data base management system can improve data quality and turnaround time.
4. Indirect cost data can only be estimated at best, and when combined with direct cost data clouds this reasonably accurate information.
5. It is difficult to collect training station data due to the differences in types of institutions.

Data Usage Findings

1. Worker demand and supply interfaces are very useful administrative tools when representatives from the entire vocational education population are involved in its preparation.
2. Training station data is not a useful planning tool in a state like Colorado where most programs have waiting lists.
3. Common cost data can be misleading if local circumstances are not considered.
4. Providing accurate data in a timely manner increases data usage dramatically.

RECOMMENDATIONS

1. Only limited resources should be used in the collection of formal industrial training data since this source has limited impact on worker supply in Colorado.
2. The 1970 Census should be used as the base for detailed in-migration data. This base should be updated with current general in-migration data.
3. The interface of manpower demand and supply data as developed in Colorado should be continued on an annual basis.
4. The interfacing of worker needs data, finance data, and training station data should not be continued on a regular basis, as it has not proved to be a useful management tool.

5. Some bottom line type of analysis such as linear programming or simulation should be developed to achieve even better usage of Colorado's vocational data bases.
6. Colorado should continue using and improving the data interface system developed by project staff.

EVALUATION

Subjective Evaluation

State and local administrators approve of and use the system developed through this project from both data provider and data user standpoints. A federal management audit found the system to be exemplary. A management consulting group found the system to meet most administrative data needs.

Objective Evaluation

Data return is above 95 percent in all areas and almost 100 percent in most areas. Data usage has increased 200 percent during the project period. Turnaround from request to report averages 11.5 working hours as compared with 45 working hours when the project started.

FINAL REPORT

Project No. 498AH50034
Grant No. G007500335

A DESIGN OF AN INTERACTIVE INTERFACE SYSTEM FOR FIVE COMPONENTS OF A COMPREHENSIVE MANAGEMENT INFORMATION SYSTEM FOR COLORADO

James L. Harris
Robert W. Scarlata

State Board for Community Colleges and Occupational Education

June 30, 1977

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U.S. DEPARTMENT OF HEALTH, EDUCATION
AND WELFARE

Office of Education

Bureau of Occupational and Adult Education

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PART 1

PROBLEM UNDER CONSIDERATION

Introduction

The Management Information Systems (MIS) Section of the Colorado State Board for Community Colleges and Occupational Education (SBCCOE) has played an integral part in the administration of vocational education in Colorado. Its major role has been the supply of management information to the federal government, all sections of the Board staff, and local directors.

Seven years ago, Colorado started in earnest to build a comprehensive Management Information System. The task was facilitated by inputs from the National Center for Vocational Education at Columbus, Ohio, and suggestions from other states. Budget allotments from the Colorado Legislature and the contribution of computer services by the state administration have also been valuable. In addition, the Colorado Department of Labor and Employment has supplied manpower needs data.

By 1975, the systems for providing management information had been receiving growing acceptance from both data users and data providers. More than two hundred data requests were received and answered by the MIS Section that year. The requests came from planners, supervisors, fiscal managers, local directors, local staff, and top state administration. Further, those who provided the data had become increasingly more responsive over the years.

The Problem

Despite these major advances in the development of a Management Information System, the task of providing answers to users' questions had been hampered by several problems. The principal problem was the inability to deliver answers when information needs were immediate. There had also been problems in accuracy and interpretation of data. Further, users occasionally requested information which was not available. This problem was prevalent in accounting areas.

Generally, the systems needed improvement in the areas of data base management, identification of necessary data elements, data accuracy, and formating of reports. Also, state and local staff needed training in the use and interpretation of data.

In the early months of 1975 the Colorado State Board for Community Colleges and Occupational Education requested financial assistance from the federal government for a special project designed to make improvements in these areas. Their request was approved, and a special project was in operation for 22 months until May 1, 1977.

The Purpose

The purpose of the project was to design a software data management system capable of interacting the various data files that make up the vocational education data base. The interacting software and and support data collection systems would have the following capabilities/objectives:

Expand worker supply to include industry training and net inmigration;

Interact between worker demand data and worker supply data to output net training needs by program area;

Interact training needs output, finance and training station data;

Provide the above data and analyses to planners and decision-makers for program decisions;

Develop and implement an in-service training program for users.

Overview of the Project Activities

During September and October of 1975 the program plan and the technical plan were developed. The program plan summarized the proposal and expanded certain sections based on initial investigations. This expansion involved adding detail. A schedule of activities for implementing the program plan was also developed. The primary purpose of the technical plan was to define and coordinate the numerous activities, needs, and objectives of the project.

During the next five months a literature search led to the selection of three software systems (data base, management systems) capable of handling Colorado's interface needs. The three systems were evaluated by comparing Colorado's needs with performance specifications, and one was selected. In addition, various techniques for interfacing manpower demand and supply data were studied. A preliminary model was developed and tested. Files were restructured for use in a data management system. Data collection instruments were developed to provide necessary information.

During the next four months, support software for the data base management system was designed, revisions to the manpower demand and supply were implemented, and initial input for testing the data base management system was edited and reconciled.

At the end of the 1976 fiscal year the project progress report was prepared and submitted. Because of a two-month delay in hiring staff and delays in installing a remote data terminal, an interactive terminal, and access to Data Management software, a request for four additional months was made and subsequently granted in October, 1976.

In July, 1976, the MIS Section was given complete access to the data base management system and all necessary hardware. A number of installation and programming problems were uncovered and resolved with assistance from the vendor software engineer by the middle of October. During this period two sample files were used for testing.

Between mid-October, 1976, and April, 1977, the project staff fully developed two data bases, i.e., the Finance File and the Teacher File, and partially developed the Student File. The project staff also developed the requirements for additional data files in terms of data format. The Worker Demand and Supply in Colorado, 1978-1982 report was developed along with data base requirements for a census file for the State Plan for Vocational Education.

In the last months of the project a training program was developed for frequent users who would be able to ask the Data Base Management System standard questions and receive specific answers. Two computer programmers were trained to access the computer for answers to nonstandard questions and to prepare massive analyses of the data in printouts on the batch terminal.

PART 2

PROCEDURES

Introduction

This part of the report describes the procedures used to complete the project. The procedures are grouped into major activities for clarity and, therefore, do not necessarily follow the order outlined in the proposal.

Developing Worker Supply Data

Worker supply data consisted of supply from public schools, private vocational schools, worker in-migration, industrial training, apprenticeship training, government agency training, and selected four-year programs.

Public Supply

Colorado had public programs in comprehensive high schools, area vocational schools, community colleges, and state institutions. Vocational completers from all of these types of institutions constituted the public supply of trained workers.

Colorado had a public vocational student accounting system when the project started in 1975. The problem, then, was to modify the system to a point that data on enrollments, completions, and placements were accurate enough and complete enough to be used in a data-based management system.

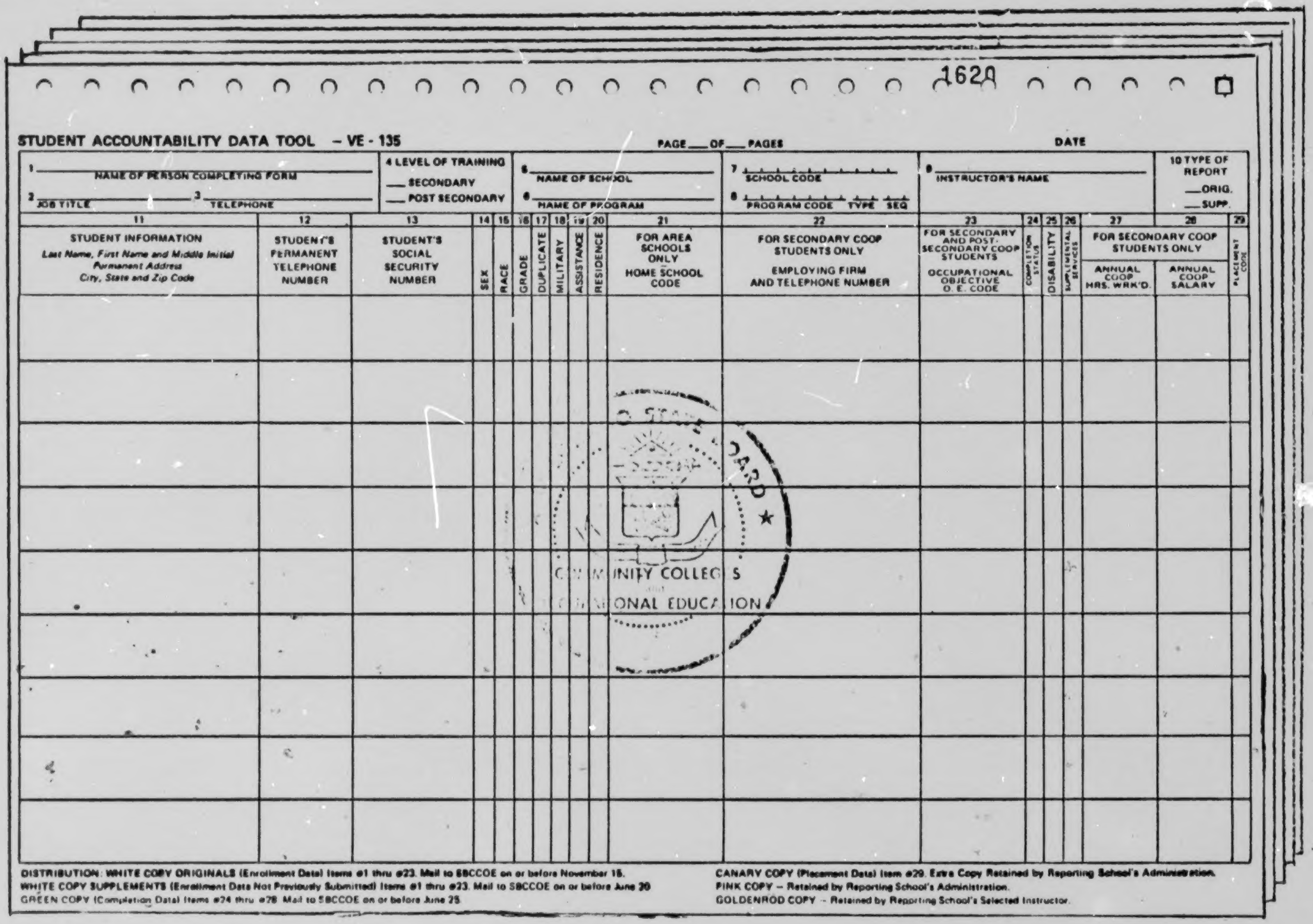
The first step was to determine which data items on students were necessary for administration of vocational education in Colorado. This task was accomplished by:

1. Developing a list of data items then being collected in Colorado and other states;
2. Having a panel of state and local administrators rank each item in terms of importance;
3. Summing the scores for each item and rank ordering the items by total score;
4. Establishing a total score cutoff below which data items were rejected; and,
5. Utilizing a challenge procedure where panel members could attempt to justify either the lowering or raising of an item's score.

When the necessary data items had been established, activity shifted to the development of data collection systems. Through a series of seven meetings with local and state administrators it became apparent that no single data collection system would suffice. The community and junior colleges had automated data processing capabilities and wished to provide data on computer tape. Further, they were already reporting enrollments to the state and, with a slight modification to their old system, could meet the new data requirements. Other institutions requested the development of a forms flow system. Both systems were developed on an individual student basis in a manner that would result in a compatable comprehensive student file.

For the tape file, enrollments, completion, and placement data were submitted on separate tapes and merged for each student by Social Security, school, and program. Non-vocational data items were stripped, and items were reformatted to match the forms file format. A complete description of this system can be found in Appendix A.

Development of the forms system required the design of a new form called the VE-135 (See Figure 1). This form replaced three old forms previously used to collect enrollment, completion, and placement data. The VE-135 used a five-part carbonized format. On the first part, local agencies reported enrollment data which was reproduced on the following four parts



1620

STUDENT ACCOUNTABILITY DATA TOOL – VE - 135

PAGE ___ OF ___ PAGES

DATE

1 ______ NAME OF PERSON COMPLETING FORM

2 ______ JOB TITLE

3 ______ TELEPHONE

4 LEVEL OF TRAINING

___ SECONDARY

___ POST SECONDARY

5 ______ NAME OF SCHOOL

6 ______ NAME OF PROGRAM

7 ______ SCHOOL CODE

8 ______ PROGRAM CODE ___ TYPE ___ SEQ

9 ______ INSTRUCTOR'S NAME

10 TYPE OF REPORT

___ ORIG.

___ SUPP.

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
STUDENT INFORMATION *Last Name, First Name and Middle Initial* *Permanent Address* *City, State and Zip Code*	STUDENT'S PERMANENT TELEPHONE NUMBER	STUDENT'S SOCIAL SECURITY NUMBER	SEX	RACE	GRADE	DUPLICATE	MILITARY	ASSISTANCE	RESIDENCE	FOR AREA SCHOOLS ONLY HOME SCHOOL CODE	FOR SECONDARY COOP STUDENTS ONLY EMPLOYING FIRM AND TELEPHONE NUMBER	FOR SECONDARY AND POST-SECONDARY COOP STUDENTS OCCUPATIONAL OBJECTIVE O. E. CODE	COMPLETION STATUS	DISABILITY	SUPPLEMENTAL SERVICES	FOR SECONDARY COOP STUDENTS ONLY ANNUAL COOP HRS. WRK'D.	ANNUAL COOP SALARY	PLACEMENT CODE

DISTRIBUTION: WHITE COPY ORIGINALS (Enrollment Data) Items #1 thru #23. Mail to SBCCOE on or before November 15.
WHITE COPY SUPPLEMENTS (Enrollment Data Not Previously Submitted) Items #1 thru #23. Mail to SBCCOE on or before June 20
GREEN COPY (Completion Data) Items #24 thru #28. Mail to SBCCOE on or before June 25.

CANARY COPY (Placement Data) Item #29. Extra Copy Retained by Reporting School's Administration.
PINK COPY – Retained by Reporting School's Administration.
GOLDENROD COPY – Retained by Reporting School's Selected Instructor.

FIGURE 1. STUDENT ENROLLMENT, COMPLETION, AND PLACEMENT FORM

through the carbonized process. On the second part, local administrators added completion data. On the third part, local administrators entered placement data. The fourth and fifth parts were retained at the local school. Advantages of this form design were:

a. Local schools had a record of all data transactions.
b. Once basic data was entered, it was never entered again.
c. It facilitated forms flow at the State Board.
d. It cut mailout costs.

A description of this system can be found in Appendix B.

When all enrollment, completion, and placement data were collected, they were processed to computer tape and edited. The result was a file of all students containing enrollment, completion, and placement data.

Using this file, estimates of public manpower supply were developed. Those students who completed or obtained a marketable skill and were employed or seeking employment were considered to be supply.

Private School Supply

One of the weaker links in the supply data previously published by the State Board (prior to 1976-7) was worker supply data from private schools. To improve the quality of this data, the Colorado Private School Association was contacted. As a result of this contact, arrangements were made for project staff to speak at an Association meeting.

At the meeting the need for accurate planning data was emphasized. Private school administrators responded by changing their Association reporting procedures in a manner which provided more accurate supply data from their sector. They felt that they would be one of the major beneficiaries of high-quality planning. They provided data on enrollments, completions, and availability (as defined for public supply) in aggregate form by program. Private school supply was determined by using the number of completers by program as worker supply.

Worker In-Migration Supply

Estimating in-migration supply proved to be a complex problem with no really satisfactory solution. A wide variety of Colorado government agencies were contacted about this problem. Of these, a surprising number had estimates of in-migration. The problem became how to estimate in-migration of a particular type of worker. No agency had data with this type of detail.

At a national conference in Chicago in the fall of 1975, Florida representatives suggested using U.S. Census data which, while old, at least had the necessary detail. With the help of the University of Colorado, project staff first determined in- and out-migration by occupation from 1965-1969 and then made educated guesses for the 1976-81 period.

Apprenticeship Training Supply

The project staff first approached this problem by contacting unions listed in Colorado phone directories. This proved unsatisfactory, since many unions either refused to provide the data or could not provide the data.

The next step was to contact the Colorado Apprenticeship Council. This agency had data on all approved apprenticeship supply. Each person completing an apprenticeship was considered to be supply.

Industrial Training Supply

After investigating possible data sources such as the Office of Equal Opportunity, it was determined that no organization in Colorado (or the federal government) had data on formal training in industry. It appeared that the only alternative was to survey.

Initially, five large Colorado firms were contacted for ideas on the format of a survey questionnaire. These ideas were consolidated in a rough draft form, and the form was taken to forms experts on the SBCCOE staff. This staff modified the form, and the modified version was field tested. After the field test, the firms in the sample were contacted to determine problems with forms design. After further modification, the form was field tested again. At this point the field-test results indicated that industrial representatives did not feel there was enough preparatory vocational training to justify continuing, and the survey effort was discontinued.

Four-Year Institution Supply

In Colorado, four-year postsecondary institutions train workers who compete with vocational graduates for jobs in areas such as nursing, computer programming, agriculture, etc. Since this competition occurs, relevant four-year graduates were considered to be worker supply.

The Colorado Commission on Higher Education staff was contacted and agreed to supply data on four-year graduates with majors in vocational areas. All of these graduates were counted as supply.

Government Training Supply

Federal, state, and local government organizations trained workers in fields such as police science, firemanship, EMT, etc. It was deemed necessary to count these trainees as supply, since they have major impact on certain occupations.

Letters were mailed to government agencies requesting information on training they were conducting. This mailout was followed with phone calls. The supply which was identified through these contacts was deemed worker supply from this sector.

Worker Demand Data

Worker demand data is a critical data element in the vocational education planning process. At this time there is no proof-positive method for forecasting worker demand for the future. The Bureau of Labor Statistics does have, however, the best method available at this time. This method is called the BLS Matrix Approach. The approach utilizes several established data bases resident at the Colorado Employment Service, including the Unemployment Insurance (UI) file, the Occupational Employment Survey (OES) file, Worker Survivor files, and the BLS Matrix itself. This data was put together using trends to forecast the future.

The first step was to estimate employment by industry. The UI file has been updated quarterly and contains employment by covered industry for many years. Uncovered industry figures, e.g., agriculture, government, were added to get a complete picture. With this data as a basis, statistical tools such as curvi-linear regression allowed the development of forecasts of future employment by industry. Once these forecasts were developed, trained economists adjusted them for non-standard conditions.

It should be noted that Colorado has many energy resources such as coal and shale oil. Over the past three years many studies analyzing the impact of developing energy resources have been prepared. This information was taken into consideration when developing forecasts.

Occupational profiles were developed for each Colorado industry. For example, of the workers in industry X, Y_1 percent were electrical engineers, Y_2 precent were secretaries, Y_3 percent were electricians, etc. The 1970 Census and the OES data were used to develop these profiles for the present and the future. Again, trained economists adjusted the figures for unusual circumstances.

Once estimates of employment growth by industry and a pattern of occupations in the industry had been developed, it was a simple matter to estimate growth of employment by occupation in Colorado. This data was supplemented by estimates of replacement needs using occupational survival data.

The final results were checked against figures from regulated occupations such as nurses, medical technicians, etc., and adjustments were made when necessary.

Occasionally matrix data did not provide the detail necessary for planning. When this occurred the data was broken into smaller units using any other detail available including detailed CES surveys from the past and the detail from the matrix itself.

Interfacing Demand and Supply Data

The interface (putting data items together) proved to be a major problem. Demand data and in-migration data were organized by census codes, public and private school data were organized by U.S.O.E. codes, and apprenticeship data were organized around program title. Frequently there was not a clearcut match between the coding systems. The problem was resolved by first having a panel of experts (state staff) interface the codes. The second step was to send the preliminary interface to concerned agencies and adjust it on their recommendation. The result was a compromise between all groups concerned.

Developing Training Station Data

The major problem found in the collection of training station data was the definition of "training station." The project staff discussed the problem with the state vocational staff and identified four parameters. These parameters were:

1. The definition must be short and simple.
2. The definition must be objective.
3. The definition must apply to all schools.
4. The definition must be in terms that are meaningful to supervisors and planners.

Given these parameters, the project staff and the state staff met and developed the following definition whcih is expressed in question form.

> "With the present funding, the present facilities, and the present instructors, what is the maximum number of students who could be trained in this vocational program per school year?"

This question was inserted into a standard Colorado MIS form (the VE-114), and data was collected during the 1975-76 school year.

Developing Common Cost Data

Each year Colorado collected data on staff costs (salary and benefits), equipment costs, books and supplies costs, transportation costs (student and staff), and construction costs, for every program and service in the state including administrator, guidance, placement, and supplemental service costs. This was, of course, a rather complete picture of direct costs which can be attributed to vocational education.

Indirect costs such as custodial services, libraries, lights, heat, etc., were not reported. Therefore, the Colorado picture of program costs was incomplete. The question appeared to be "how to best determine indirect costs."

One seemingly obvious way to approach the problem was to survey. With this thought in mind, local administrators, state administrators, and representatives from the State Department of Education met to consider the problem. It soon became apparent that allocating indirect costs to programs was feasible at local institutions but there was no method which would even closely apply to the state as a whole. The emerging difficulty involved the diverse types of institutions at all levels. They had different accounting systems, different staff structures, different physical layouts and usages of same, different concepts of costs, etc.

The Commission on Higher Education and the State Department of Education suggested a proration method on an FTE basis. This idea was rejected, since it would provide only an estimate of indirect costs which probably would cloud the direct cost data.

Finally, this group of experts came to the conclusion that the only common costs across the state were direct costs. Indirect costs were unique to either the institution or the type of institution.

Proceeding from this position, the project staff set about revising the VE-115 form (which collected direct cost data) in a manner which would insure more uniform and accurate information. An analysis of the data on hand indicated the following problems:

1. Local administrators occasionally changed program codes from year to year (e.g., clerical one year and secretarial the next).
2. School codes were sometimes reported incorrectly.
3. Instructions for completing the form were out of date.

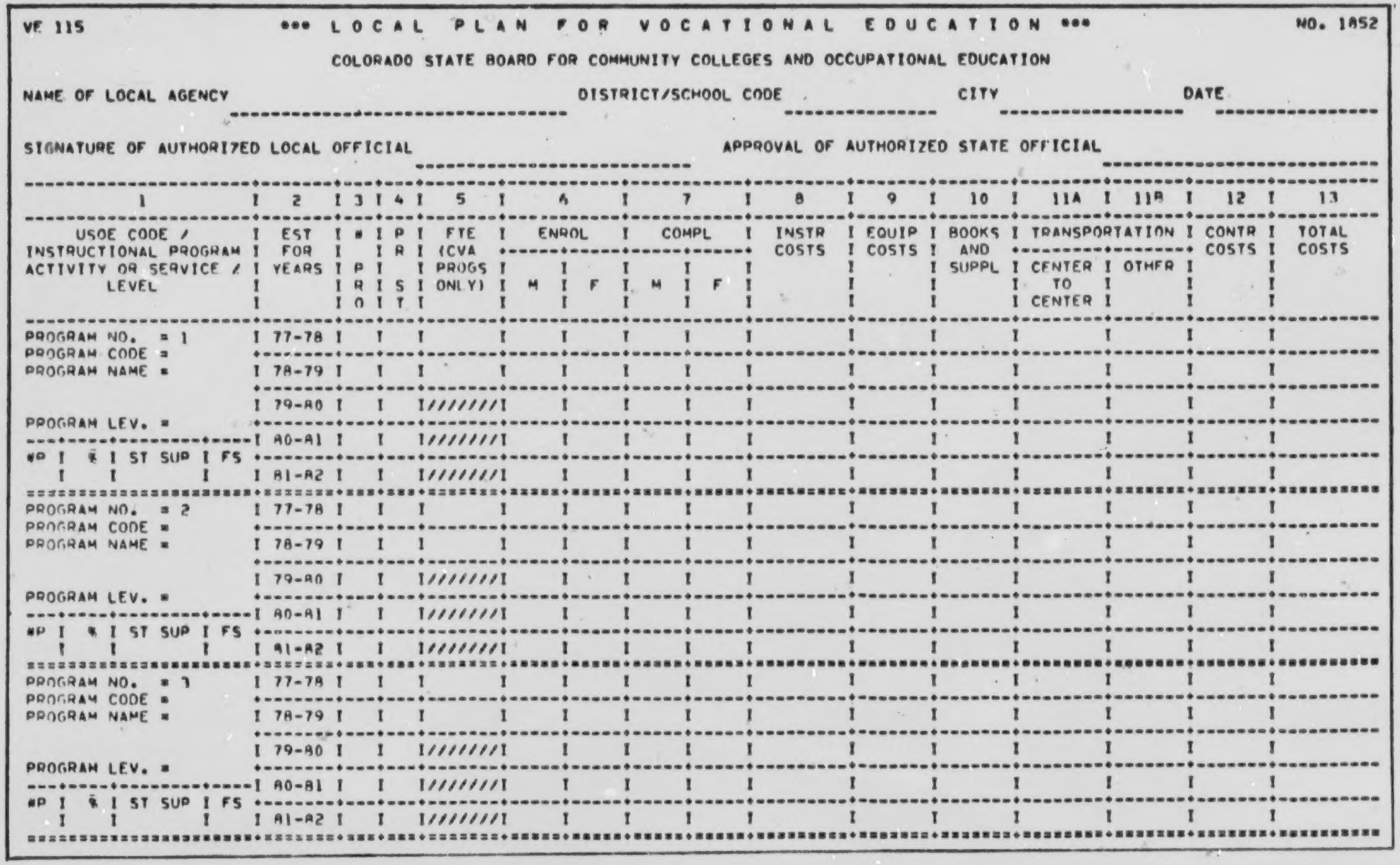
The project staff solved the first two problems by preparing reporting forms with school and program codes entered by computer from a master file of programs (see Figure 2). Local administrators supported this new approach almost 100 percent.

The third problem was solved by rewriting the instructions. This was done by the state planners in conjunction with the local administrators.

Developing a Data Interface System

In 1974, Colorado had agreed to serve as a field-test site for the MISVE System being developed by the Center for Vocational Education in Ohio. The field test was conducted during the first months of the project. This experience exposed the project staff to many new concepts which have since become integral parts of the Colorado MIS.

Possibly the most valuable concept to come to light was Data Base Management. Data Base Management is a software concept where data are organized for quick and easy access in a wide variety of forms and combinations.



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VE 115               *** L O C A L   P L A N   F O R   V O C A T I O N A L   E D U C A T I O N ***          NO. 1852

                    COLORADO STATE BOARD FOR COMMUNITY COLLEGES AND OCCUPATIONAL EDUCATION

NAME OF LOCAL AGENCY                                  DISTRICT/SCHOOL CODE             CITY                  DATE
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SIGNATURE OF AUTHORIZED LOCAL OFFICIAL                        APPROVAL OF AUTHORIZED STATE OFFICIAL
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FIGURE 2. COMMON COST DATA FORM

Selecting a Data Base Management System

The project staff had two possible alternatives for the development of a data interface system. A specialized system could be developed from scratch, or a general data base management system could be leased and adapted. Initially both approaches were explored.

In October of 1975 work was begun on a specialized system, and by January of 1976 a preliminary software package was operational. This package could list frequency counts on any combination of three data items in the Colorado data base.

Simultaneously, commercial data base management systems were evaluated. Three high-performance systems were selected for a comprehensive review. These three systems were System 2000, IMS, and ADABAS.

System 2000 was being tested by the Center for Vocational Education in Ohio, and project staff had some experience in that development and implementation. The system had a hierarchical data storage structure and provided several exemplary features.

IMS was the IBM standard and was, of course, of very high quality. Since it had many features not found with ADABAS and System 2000, it was operationally the most complex of the three systems.

ADABAS was a West German product and was organized on an inverted table format. Also, it contained features not found in other systems and was exemplary in design.

When the capabilities of commercial systems were compared with the capabilities of any system which the project staff could develop, it was evident that Colorado needed a high-performance commercial system. The problem, then, became "which commercial system."

The first limiting parameter was money. The project was not budgeted sufficiently for leasing a commercial system. Central Automated Data

Processing (CADP), the state computer operation, was approached for a solution. Apparently, Vocational Education was not the only state agency desiring a commercial data base management system, since CADP proposed leasing of a system which would serve all state agencies. Vocational MIS was allowed to be the first and only user during the project period.

The problem of "which commercial system" was resolved on a total state need basis. The user committee of CADP organized a RFP subcommittee which reviewed all appropriate commercial data base management systems. This subcommittee selected ADABAS.

In looking at the events which led to the selection of ADABAS, it seems that everything that happened was to the advantage of the project. Because the staff could not develop a system which could match commercial systems and because funding was not adequate, CADP was approached. Because CADP was approached, a common interest was identified and a system that best met the needs of the entire CADP user group was selected. Because the system selected met the needs of a large group of agencies including Vocational Education, it was installed on a permanent basis. The results were that Vocational Education had first access to a high-quality data base management system which was affordable and permanently installed at CADP.

Implementing the Data Base Management System

Once ADABAS was selected, implementation procedures were initiated. The first step was to modify ADABAS to fit the particular hardware available. Systems engineers from the vendor accomplished this task in January and February of 1976.

The second step was to establish sample data bases and test the system. This was accomplished in March, April, May, and June of 1976. Several software problems were encountered and overcome during this period with the help of vendor systems engineers.

The third step was to establish the two most frequently used vocational data bases; i.e., the fiscal file and the teacher file. This was accomplished in July and August of 1976. Problems encountered during that period revolved around data accuracy. Coding was manually checked and corrected as errors were found. This should not be a problem in the future, as only updates will be entered.

The fourth step involved training personnel in the use of ADABAS. MIS personnel attended vendor classes and workshops, read manuals and received OJT from vendor personnel during September and October.

The fifth step was to develop a positive state staff reaction to the use of Data Base Management. The system was demonstrated to small groups throughout December and January. The demonstrations consisted of a discussion of system capabilities and a question-answer session where state staff were encouraged to ask management-information-type questions which were immediately answered using the system.

Ths sixth and final step was to provide briefings on the use of Data Base Management in the administration of vocational education. Two training sessions involving the entire state staff were given in March and April of 1977. These training sessions consisted of brief presentations of the non-technical concepts involved and discussion periods.

Evaluations

The project staff had deep concerns about evaluation of the final results. The purpose of the project was to provide interfaced data for management in an accurate form and timely manner. Could this best be measured objectively or subjectively? Should state staff be surveyed to determine their satisfaction? Should outside experts be asked to evaluate the project?

The project advisory committee decided that the project could best be evaluated by objectively examining the use of the system by state staff. If staff were using the system extensively, then it could be assumed that they were confident about data accuracy and satisfied with the turnaround time. On the other hand, if staff were not using the system, then something was not working properly.

The baseline for comparative purposes was job (report) production for the year preceding the project start. Job production from this point would indicate the value of the system being developed.

To supplement this evaluation, the project staff conducted several subjective surveys of data users and data suppliers. In addition, three different oustide evacuations occurred and were included in the project evaluation. Finally, impact factors such as demonstrated use and state staff action on the future of the system were examined.

PART 3

FINDINGS AND RESULTS

This part of the report presents findings and results associated with project activities. It is organized to correspond with the Procedures presented in Part 2.

Public Supply Data

Public supply data was gathered from secondary and postsecondary vocational programs in comprehensive high schools, area vocational schools, community and junior colleges, and institutions. There are more than 1600 of these programs in Colorado.

A student was considered to be trained supply when the student (1) enrolled, (2) completed, and (3) was available for employment. Employed students enrolled for supplemental training were not counted as supply. Five-year supply was calculated by multiplying the number of completers who were available for employment in 1976 by five. This figure represents supply from public programs over the next five years, given no change in the Colorado program mix.

An examination of the data indicates that Colorado, like most other states, has a heavy concentration of enrollment in traditional areas. The percent of enrollment which completes each year varies by program due, to some extent, to (1) the level of the program, (2) the length of the program, (3) the difficulty of the program, and (4) the organization of the program. Not all students who complete are available for employment. Some continue their education at higher levels, some die or are disabled, and some simply do not enter the labor force.

TABLE 1

PUBLIC WORKER SUPPLY IN COLORADO

CODE	PROGRAM	ENROLLMENT	COMPLETIONS	AVAILABLE	FIVE YEAR SUPPLY
010100	Production Agriculture	3,879	764	534	2,670
010200	Ag Services & Supply	169	37	25	125
010300	Ag Mechanics	233	76	25	100
010500	Horticulture	543	163	105	525
010600	Resources	169	39	25	100
010700	Forestry	10	3	2	10
019900	Other Ag	569	41	37	185
040100	Mass Media	77	52	39	195
040200	Apparel and Accessories	383	190	134	670
040300	Automotive	118	77	47	235
040400	Finance and Credit	106	36	10	50
040500	Floristry			12	60
040700	Food Services	1,140	370	128	940
040800	General Merchandise	2,563	708	509	2,545
040900	Hardware, Bldg. Materials	78	46	29	145
041000	Home Furnishings	31	19	11	55
041100	Hotel and Lodging	212	34	30	150

TABLE 1

PUBLIC WORKER SUPPLY IN COLORADO

CODE	PROGRAM	ENROLLMENT	COMPLETIONS	AVAILABLE	FIVE YEAR SUPPLY
041300	Insurance	12	8	5	25
041500	Personal Services	324	114	85	425
041600	Petroleum	52	33	19	95
041700	Real Estate	379	58	41	205
041800	Recreation	247	64	35	175
041900	Transportation	59	36	19	95
042000	Retail Trade, Other	870	265	208	1,040
043100	Wholesale Trade, Other	59	35	21	105
070101	Dental Assistant	197	104	38	190
070102	Dental Hygienist	151	31	20	100
070203	Medical Lab Assistant	145	55	28	140
070301	Nursing (Associate Degree)	1,069	278	275	1,370
070302	Practical Nursing	776	438	280	1,400
070303	Nurse Aide	746	528	224	1,120
070305	Surgical Tech	67	37	35	175
070399	Other Nursing	439	199	56	280
070501	Radiologic Tech	629	103	38	190

TABLE 1

PUBLIC WORKER SUPPLY IN COLORADO

CODE	PROGRAM	ENROLLMENT	COMPLETIONS	AVAILABLE	FIVE YEAR SUPPLY
070503	Nuclear Medical Tech	25	12	3	15
070599	Other Radiologic	67	7	5	20
070600	Ophthalmic	2	2	2	10
070903	Inhalation Therapy	199	25	8	40
070904	Medical Assistant	533	357	221	1,105
070907	Emergency Medical Tech	1,255	319	195	975
090201	Child Care	1,167	188	149	745
090202	Clothing Management	227	129	52	260
090203	Food Management	830	627	256	1,080
090205	Inst. & Home Mgmt. & Supp. Svc.	79	49	27	135
140100	Accounting & Computing	5,493	1,822	899	4,495
140200	Data Processing	2,554	984	494	2,470
140300	Clerical	15,506	6,324	3,291	16,455
140700	Secretarial	7,016	2,565	1,562	7,810
140800	Supervision	3,216	174	128	640
160101	Aeronautical Tech	282	106	71	355
160103	Architectural Tech	330	115	97	485

TABLE 1

PUBLIC WORKER SUPPLY IN COLORADO

CODE	PROGRAM	ENROLLMENT	COMPLETIONS	AVAILABLE	FIVE YEAR SUPPLY
160106	Civil Tech	438	28	27	135
160107	Electrical Tech	336	113	75	375
160108	Electronic Tech	3,298	733	600	3,000
160109	Electro Mechanical Tech	164	22	20	100
160113	Mechanical Tech	133	20	39	195
160601	Commercial Pilot	70	34	12	60
160602	Fire and Safety	1,457	259	140	700
160605	Police Science	1,341	311	279	1,395
169900	Tech, Other	2,457	615	236	1,180
170200	Appliance Repair	345	51	47	235
170301	Body and Fender	1,406	477	162	710
170302	Auto Mechanics	4,298	1,285	963	4,815
170399	Auto Services	829	437	146	730
170600	Business Machine Maintenance	38	16	6	30
170700	Commercial Art	643	78	77	385
170900	Photography & Related	509	53	41	205
171001	Carpentry	883	271	227	1,135

TABLE 1

PUBLIC WORKER SUPPLY IN COLORADO

CODE	PROGRAM	ENROLLMENT	COMPLETIONS	AVAILABLE	FIVE YEAR SUPPLY
171002	Electricity	152	70	56	280
171004	Masonry	166	39	31	155
171007	Plumbing	75	27	15	75
171099	Other Construction	1,795	731	464	2,320
171100	Custodial	556	144	85	405
171200	Diesel	320	31	25	125
171300	Drafting			197	985
171400	Electrical	499	60	46	230
171600	Fabric Maintenance	16	4	4	20
171700	Foremanship	37	20	13	65
171900	Graphic Arts	1,012	256	186	930
172100	Instrument	40	14	9	45
172302	Machine Tool	54	22	13	65
172302	Machine Shop	889	280	197	985
172305	Sheet Metal	100	6	5	25
172306	Welding	2,974	781	515	2,575
172399	Metal, Other	254	78	28	140

TABLE 1

PUBLIC WORKER SUPPLY IN COLORADO

CODE	PROGRAM	ENROLLMENT	COMPLETION	AVAILABLE	FIVE YEAR SUPPLY
172601	Barbering	37	15	11	55
172602	Cosmetology	858	313	256	1,030
172900	Quantity Foods	940	314	26	130
173100	Small Engine	1,108	173	53	265
173200	Stationary Energy	13	3	3	15
173300	Textile Production	36	11	4	20
173400	Leather Working	36	12	9	45
173500	Upholstering	366	57	52	260
173600	Cabinetmaking	100	48	28	140
179900	Other T&I	3,828	400	150	750

Private School Supply Data

Private school data were gathered from approved private vocational schools by the Colorado Private School Association in 1976. Missing data were supplied by the state approving agency staff using veterans follow-up. There are 168 private vocational programs in Colorado.

Students who were identified as available for placement by the local administrators were considered to be supply. Five-year supply was computed by multiplying this annual figure by five. The derived number was, of course, an estimate of supply from private vocational programs given no change in the present program mix.

Table 2 presents the data gathered from private schools. Column 1 contains the U.S.O.E. Program Code, while Column 2 contains the program title. Column 3 contains the 1976 enrollment, Column 4 contains the number of 1976 completers (available), and Column 5 contains the estimated five-year supply.

Private school training seems to concentrate in the more exotic occupations such as fashion merchandising, real estate, floral design, bartending, broadcasting, aeronautical technology, and camera repair, although traditional programs such as clerical, stenographic, secretarial, accounting and computing, cosmetology, quantity foods, and auto mechanics also draw large enrollments. One of the more surprising results is the limited duplication of programs between private and public training (although duplication does occur in traditional areas).

Worker In-Migration Supply Data

Worker in-migration data refers to estimates of net in-migration of workers for the 1977-81 period. This data was prepared by the project staff in conjunction with the Graduate School of Business at the University of Colorado.

TABLE 2

PRIVATE SCHOOL WORKER SUPPLY IN COLORADO

CODE	PROGRAM TITLE	1975 ENROLLMENT	1975 AVAILABLE	FIVE-YEAR SUPPLY
019900	Horseshoeing	57	54	270
019900	Veterinary Assisting	57	34	170
042200	Fashion Merchandising	416	316	1,580
040300	Auto Parts Counterman	15	11	55
040500	Floral Design	350	309	1,545
040700	Bartending	335	308	1,540
040800	General Merchandising	101	30	150
041500	Massage Technician	15	15	75
041700	Real Estate	3,475	2,625	13,125
041800	Recreation, Tourism	73	73	365
090204	Interior Decorating	45	10	50
140100	Accounting and Computing	1,189	820	4,100
140200	Data Processing	192	18	90
140300	Clerical	241	158	890
140700	Secretarial	822	691	3,455
140800	Supervision	181	134	670
160101	Aeronautical	269	91	455
160106	Surveying	10	7	35

TABLE 2

PRIVATE SCHOOL WORKER SUPPLY IN COLORADO

CODE	PROGRAM TITLE	1975 ENROLLMENT	1975 AVAILABLE	FIVE-YEAR SUPPLY
160108	Broadcasting	209	143	715
160108	Electronics (TV)	261	189	945
160601	Pilot Training	66	66	330
160605	Security	33	32	160
170100	Heating and Air Conditioning	135	121	605
170301	Body and Fender	205	127	635
170302	Auto Mechanics	1,221	685	3,425
170700	Commercial Art	156	66	330
171200	Diesel Mechanics		129	645
171300	Drafting	246	121	605
171900	Graphic Arts	13	7	35
172100	Camera Repair	197	197	985
172306	Combination Welding	93	56	280
172601	Barbering		30	150
172602	Cosmetology	331	215	1,075
172900	Quantity Foods		298	1,490
173000	Refrigeration		20	100
173100	Motorcycle Mechanic	135	145	775
173500	Upholstery	19	3	15

TABLE 2

PRIVATE SCHOOL WORKER SUPPLY IN COLORADO

CODE	PROGRAM TITLE	1975 ENROLLMENT	1975 AVAILABLE	FIVE-YEAR SUPPLY
179900	Truck Driving	33	29	145
179900	Gunsmithing	450	146	730

The data is based on the 1970 Census and is presented in a by-occupation format. The Census data was updated using the latest in-migration estimates from several state agencies.

Table 3 presents the data used in the Worker Demand-Supply Interface. Column 1 contains the occupational title while Column 2 contains estimates of in-migration.

A review of the data indicates a high correlation between in-migration and worker demand (Table 7). This seems to indicate that many workers come to Colorado with a job in hand. The net in-migration figures span almost the entire spectrum of jobs.

Apprenticeship Supply Data

Apprenticeship supply data was supplied by the Colorado Apprenticeship Council. This council monitors all approved apprenticeship training. Some apprenticeship training in Colorado is not approved and is not reported.

The Council reported the number of trainees for 1976 which was multiplied by five to estimate five-year supply from this source. Although these figures fluctuate annually, the Council felt that a fairly valid estimate could be achieved using this approach.

An examination of the data provides no surprises. The number of apprentices is small and concentrated in traditional occupations. Carpenters, operating engineers, electricians, plumbers, and sheet metal workers have relatively large numbers of apprentices. There are also significant numbers of machinists, roofers, masons, and painters apprentices.

Higher Education Supply Data

The supply of workers from higher education was based on data provided by the Colorado Commission on Higher Education. There are 10 recognized institutions of higher education in Colorado offering baccalaureate degrees.

TABLE 3

NET WORKER IN-MIGRATION

OCCUPATIONAL TITLE	FIVE-YEAR ESTIMATE
Farmers (Owners and Tenants	505
Farm Managers	45
Farm Management Advisors	22
Ag Technicians	22
Gardeners and Groundskeepers	22
Foresters and Conservationists	65
Editors and Reporters	109
Public Relations Workers	22
Advertising Salesworkers	22
Sign Painters	44
Decorators and Window Dressers	44
Painters and Sculptors	44
Designers	65
Photo Process Workers	22
Printing Press Operators	22
Compositors and Typesetters	10
Salesworkers, Apparel and Accessories	183
Salesworker, Personal Service	15
Salesworker, Food Distribution	74
Salesworker, Hardware	52
Salesworker, Building Materials	48
Salesworker, Home Furnishings	36
Salesworker, Automotive	76
Garage and Gas Station Attendant	174
Management and Supervision of Building	22
Real Estate Agent and Broker	205
Insurance Agent	240
Insurance Adjuster	22
Recreation Worker	44
Attendants, Recreation	44
General Sales (Other)	1,005
Restaurant Management	220
Waiters	414
Bakers	44
Cooks	262
Meat Cutters, Butchers	87
Food, Counter and Fountain	196
Waiter Assistants	65
Janitors and Sextons	218
Building Cleaners	109

TABLE 3

NET WORKER IN-MIGRATION

OCCUPATIONAL TITLE	FIVE-YEAR ESTIMATE	OCCUPATIONAL TITLE	FIVE-YEAR ESTIMATE
Housekeepers	22	Bookkeepers	523
Freight and Material Handlers	109	Accountants	349
Flight Attendants	109	Statistical Clerks	65
Ticket and Express Handlers	174	Billing Machine Operators	22
Bus Drivers	87	Bank Tellers	65
Taxi Drivers	349	Keypunch Operators	87
Truck Drivers	436	Computer Programmers	65
Registered Nurses	2,980	Typists	234
Practical Nurses	200	Duplicating Machine Operators	22
Nurse Aides	218	File Clerks	44
Tailors	44	Miscellaneous Clerks	654
Checkers-Inspectors	65	Secretaries	1,046
Dressmakers	22	Legal Secretary	22
Sewers and Stitchers	109	Receptionists	412
Laundry and Dry Cleaners	44	Management and Administrators	22,454
Cutting Operators	22	Electrical and Electronic Technicians	67
Bank Officers	87	Telephone Line Workers	87
Collectors, Bill and Credit	22	Radio and T.V. Mechanics	44
Billing Clerks	22	Electricians	131
Estimators and Investigators	109	Stationary Engineers	22

TABLE 3

NET WORKER IN-MIGRATION

OCCUPATIONAL TITLE	FIVE-YEAR ESTIMATE
Commercial Pilots	44
Fire Fighters	44
Police	22
Aircraft Mechanics	91
R.R. Car Mechanics	22
Heavy Equipment and Diesel Mechanics	87
Auto Body Repairers	87
Miscellaneous Mechanics	44
Drafters	153
Surveyors	44
Civil Technician	22
Jewelers	22
Carpenters	262
Bulldozer Operators	87
Crane, Derrick, Hoist Operators	44
Excavating, Grading, Excavating Op.	109
Brick and Stone Masons	44
Tile Setters	22
Painters	87
Plumbers	22
Roofers	22
Cabinet Makers	65
Machinists	262
Precision Machine Operators	22
Solderers	22
Furnace Tenders	44
Hairdressers and Cosmetologists	109
Barbers	87
Child Care Workers	22

TABLE 4

APPRENTICESHIP SUPPLY

OCCUPATION	FIVE-YEAR SUPPLY	OCCUPATION	FIVE-YEAR SUPPLY
Sign Painters	5	Excavating Engineers	5
Printing Press Operators	30	Masons	120
Shoemakers - Repairers	5	Plasterers	10
Electrician	725	Cement and Concrete Finishers	25
Mechanical Technicians	20	Painters	105
Heavy Equipment Mechanics	5	Plumbers	475
Auto Body Repairers	15	Glazers	55
Auto Mechanics	20	Machinists	110
Miscellaneous Mechanics	15	Sheet Metal Workers	315
Appliance Mechanics	5	Boilermakers	60
Jewelers	10	Metal Platers	20
Roofers	180		
Drywallers	10		
Floor Layers	30		
Carpenters	595		
Sawyers	5		
Operating Engineers	285		
Bulldozer Operators	5		

All 1975-76 school year graduates in vocational areas were considered to be supply. This number was multiplied by five to estimate five-year supply given no change in programs.

Table 5 presents the data by occupation. Column 1 presents the occupation title. Column 2 presents the estimated five-year supply.

The data reflects the normal mix of higher education programs. Agriculture programs, managerial programs, and business programs dominate the supply from this sector.

One interesting point is that Colorado seems to produce a very large number of foresters and conservationists at the higher education level. A suggested reason is the excellent nationwide reputation of Colorado State University in this area.

Institutional Supply Data

The data on worker supply being trained by government agencies and institutions (other than public vocational education) was collected directly from the agencies and institutions involved. Law enforcement and health agencies were found to be offering training.

Again, the supply produced in 1976 was multiplied by five to estimate a five-year supply. It should be noted that these figures may be overestimates, as many agencies and institutions would like to turn their training efforts over to public training.

Table 6 presents data on training by government institutions and agencies. Column 1 contains the occupational title which best relates to training, while Column 2 contains five-year supply from this source.

TABLE 5

SUPPLY FROM HIGHER EDUCATION

PROGRAM	FIVE-YEAR SUPPLY
Farmers (Owners and Tenants)	505
Farm Managers	45
Farm Management Advisors	85
Horticulturists	100
Foresters and Conservationists	1,045
Editors and Reporters	675
Public Relations Workers	200
Advertising Workers	70
Radio and TV Announcers	35
Painters and Sculptors	165
Designers	15
Managers and Superintendents	365
Real Estate Agents	205
International Trade	65
Sales Management	2,500
Buyers	1,005
Purchasing Agents	660
Restaurant Management	200
Bank and Finance	985
Accountants	2,130
Systems Analysts	260
Legal Secretaries	88
Medical Secretaries	170
Management and Administrators	3,373

TABLE 6

INSTITUTION SUPPLY

OCCUPATION	FIVE-YEAR SUPPLY	OCCUPATION	FIVE-YEAR SUPPLY
Medical Laboratory Technician	300		
Practical Nurses	155		
Surgical Technicians	138		
Psychiatric Aide	4		
Radiation Therapist	4		
Nuclear Medical Technician	19		
EKG Technician	33		
Inhalation Technician	58		
Police	100		

Worker Demand Data

Worker demand data was provided by the Colorado Employment Service and was developed using the Bureau of Labor Statistics Matrix approach. Matrix figures were supplemented using OES program figures and a special health survey conducted in Colorado several years ago.

The demand data includes both expansion needs and replacement needs and covers the projection period. Replacements are calaulated on the basis of deaths, retirements, changes of occupations, etc. Changes of jobs in the same occupation are not included.

Table 7 presents the demand data. Column 1 contains the occupational title. Column 2 contains the 1976 estimated employment, while Column 3 contains the projected demand (both expansion and replacement).

An examination of the data reveals that Colorado is basically a trade center with relatively little agriculture and manufacturing. As a result, there are many job opportunities in sales, clerical, managerial, services, and other areas of this nature.

The Worker Demand Supply Interface

The problem addressed in Table 8 is "What are the net manpower needs in Colorado by occupational area over the next five years given present training and in-migration rates and worker demand estimates for the future?" The data presented is subject to the following constraints:

1. The interface (matching of jobs, training, etc.) was prepared by experts; however, there was no exact interface for all training and all jobs.
2. The best data available was used; however, the interface cannot be better than the weakest data set.
3. The projections are for five years. Any given year may fluctuate dramatically given unusual circumstances such as major recessions, etc.

TABLE 7

WORKER DEMAND

OCCUPATION	FIVE-YEAR DEMAND	OCCUPATION	FIVE-YEAR DEMAND
Farmers (Owners and Tenants)	3,760	Sign Painters	61
Farm Managers	565	Decorators and Window Dressers	571
Farm Labor Supervisors	144	Designers	484
Farm Laborers (Wage)	2,610	Photographers	309
Blacksmith	52	Photo Process Workers	886
Animal Caretakers	512	Printing Press Operator	417
Farm Management Advisors	5	Compositors and Typesetters	285
Mixing Operatives	79	Electrotypers and Stereotypers	19
Agriculture Technicians	249	Photo Engravers and Lithographers	77
Farm Service Laborers	15	Salesworkers, Apparel and Accessories	3,645
Millers, Grain, Flour, Seed	15	Salesworkers, Personal Service	1,243
Gardeners-Groundskeepers	1,434	Salesworkers, Food Distribution	1,527
Foresters and Conservationists	259	Salesworkers, Hardware	602
Editors and Reporters	834	Salesworkers, Building Materials	560
Public Relations Workers	455	Salesworkers, Home Furnishings	684
Advertising Salesworkers	436	Parking Attendants	49
Radio and TV Announcers	45	Salesworkers, Automotive	1,440

TABLE 7

WORKER DEMAND

OCCUPATION	FIVE-YEAR DEMAND	OCCUPATION	FIVE-YEAR DEMAND
Gas and Station Attendant	494	Buyers	1,098
Managers and Superintendents, Building	2,534	Salesworkers, Construction	1,662
Baggage Porters and Bellhops	50	Warehouse Workers	318
Boarding Housekeepers	116	Purchasing Agents	958
Real Estate Agents and Brokers	2,845	Sales Management, Wholesale	1,616
Real Estate Appraisers	154	Sales Representatives, Wholesale	2,031
Insurance Agents	1,299	Restaurant, Cafeteria Management	1,824
Insurance Adjusters	287	Waiters	10,367
Recreation Workers	377	Bakers	400
Ushers, Recreation, Amusement	16	Cooks	6,691
Attendants, Recreation	488	Meat Cutters, Butchers	1,010
Demonstrators	333	Food Counter and Fountain	1,207
Sales Clerks	7,622	Waiter Assistants	788
Salesworkers, Retail	1,342	Bartenders	1,837
Sales Management, Retail	1,786	Janitors and Sextons	6,409
Stock Clerks	2,050	Building Cleaners	4,800
Stock Handlers	2,475	Housekeepers	1,082

TABLE 7

WORKER DEMAND

OCCUPATION	FIVE-YEAR DEMAND	OCCUPATION	FIVE-YEAR DEMAND
Freight and Material Handlers	1,097	Radiologic Technician (X-ray)	344
Flight Attendants	888	Radiation Therapist	61
Ticket and Express Handlers	566	Nuclear Medical Therapist	120
Delivery and Route Workers	2,567	Lens Grinders and Polishers	440
Bus Drivers	284	EKG Technician	191
Taxi Drivers	172	Inhalation Technician	316
Truck Drivers	3,108	Emergency Medical Technician	1,269
Dental Assistant	807	Tailor	210
Dental Hygienist	254	Checkers-Inspectors	1,378
Dental Lab Technician	40	Dressmakers	570
Med. Lab. Technologists and Technicians	230	Dyers	8
Registered Nurses	4,547	Sewers and Stitchers	1,567
Practical Nurses	2,563	Laundry and Dry Cleaners	850
Nurse Aides	4,929	Clothing Ironers and Dressers	495
Surgical Technician	258	Launderers--PHH	80
Medical Records Technician	189	Cutting Operators	341
Psychiatric Technician	107	Knitters, Loopers, Toppers	5

TABLE 7

WORKER DEMAND

OCCUPATION	FIVE-YEAR DEMAND	OCCUPATION	FIVE-YEAR DEMAND
Spinners, Twisters, Winders	13	Computer Operator	1,236
Shoemakers - Repairers	150	Computer Programmer	1,061
Shoemaking Machine Operators	28	Systems Analyst	654
Upholsterers	321	Typists	7,010
Stock and Bond Agents	332	Proofreaders	190
Bank Officers and Finance Management	2,185	Duplicating Machine Operator	90
Collection, Bill and Credit	195	File Clerks	1,565
Billing Clerks	894	Office Machine Operator	408
Estimators and Investigators	827	Miscellaneous Clerks	10,307
Bookkeepers	8,625	Secretaries	24,490
Accountants	3,009	Legal Secretaries	1,279
Statistical Clerks	1,279	Medical Secretaries	520
Bookkeeping and Billing Machine Op.	466	Stenographers	465
Calculating Machine Operator	164	Receptionists	2,881
Payroll and Time Clerks	684	Management and Administrators	36,327
Bank Tellers	1,348	Blue Collar Supervisors	4,757
Keypunch Operator	865	Electrical and Electronic Technician	982

TABLE 7

WORKER DEMAND

OCCUPATION	FIVE-YEAR DEMAND	OCCUPATION	FIVE-YEAR DEMAND
Data Processing Machine Repair	370	R. R. Car Shop Repairers	112
Telephone Linemen	2,929	Heavy Equipment Tech. and Diesel	2,067
Electrical Power Line Workers	222	Auto Body Repairers	210
Winding Operators	133	Painters, Manufactured Articles	168
Radio and TV Repairers	622	Auto Mechanics	2,939
Electrician	1,117	Miscellaneous Mechanics	724
Power Station Operators	54	Drafters	1,835
Stationary Engineers	260	Surveyors	572
Commercial Pilot	242	Civil Tech (Urban Planners)	26
Firefighters	131	Civil Tech (Surveyor Assistant)	9
Marshall and Constable	21	Construction Inspectors	51
Police and Detective	632	Inspectors, Public	560
Sheriffs and Bailiffs	130	Household Appliance Mechanic	486
Guards	653	Heating, Air Conditioning Mechanic	662
Farm Equipment Mechanics	362	Office Machine Repairers	422
Aircraft Mechanics	218	Jewelers and Watchmakers	161
Mechanical Technicians	45	Roofers and Slaters	458

TABLE 7

WORKER DEMAND

OCCUPATION	FIVE-YEAR DEMAND	OCCUPATION	FIVE-YEAR DEMAND
Drywallers and Lathers	349	Roofers and Repairers	458
Floor Layers Excluding Tile	66	Cabinet Makers	196
Carpenters	4,183	Machinist	889
Carpenter Helpers	194	Pattern and Model Makers	32
Sawyers (Millwright)	172	Precision Machine Operator	130
Bulldozer Operators	559	Drill Press Operator	119
Crane, Derrick, Hoist Operator	346	Lathe and Mill Machine Operator	388
Excavating, Grading, etc., Operator	1,856	Grinding Machine Operator	400
Drillers, Earth	225	Sheet Metal Worker	597
Brick and Stone Mason	382	Solderers	50
Tile Setters	133	Welders and Flamecutters	2,446
Plasterers	65	Tool and Die Makers	299
Cement and Concrete Finishers	327	Jig and Die Setters	100
Painters, Construction, & Maintenance	976	Riveters and Fasteners	68
Plumbers and Pipefitters	753	Boilermakers	67
Glazers	285	Punch and Stamp Operator	132
Construction Laborers	1,729	Engravers	14

TABLE 7

WORKER DEMAND

OCCUPATION	FIVE-YEAR DEMAND	OCCUPATION	FIVE-YEAR DEMAND
Forge and Hammer Operator	28		
Rollers and Finishers, Metal	33		
Filers and Polishers, Metal	66		
Metal Platers	73		
Molders, Metal	65		
Furnace Tenders, Smelters	110		
Hairdressers and Cosmetologists	3,057		
Barbers	618		
Child Care Workers (except PHH)	3,507		
Child Care Workers (PHH)	1,725		
School Monitors	216		

4. The demand data reflects projected need while the supply data reflects present supply rates. Adjustments in supply through the planning process can change net figures.
5. Only statewide data is presented. Data on major labor markets is also available.
6. The data were clustered in related groups. The clustering was accomplished based on relatedness as teachers reported follow-up data in 1975.

There are ten columns of data in the table. Column 1 contains training program O.E. Codes, Column 2 contains program titles, and Column 3 contains the number of workers expected to be produced by public vocational education between 1977 and 1982 given present student production rates. Column 4 presents the number of workers expected to be produced by private schools during 1977-1982, while Column 5 presents expected in-migration of trained workers during the period. Column 6 contains the number of workers expected to be produced during the period by colleges and universities, government institutions, and apprenticeship programs, while Column 7 contains the sum of Columns 3-6, while Column 8 contains expected worker demand for 1977 through 1982. This demand includes both replacement and expansion figures. Column 9 contains the difference between Columns 7 and 8, or net need. Parentheses in Column 9 indicate an oversupply. Column 10 contains occupational titles on which the worker demand is based.

The data is grouped in clusters of related occupations. This grouping was developed to reflect planning clusters which are highly correlated with placement rates when jobs per graduate are compared with percent of students placed.

Training Station Data

Training station data was suggested in the proposal as a meaningful planning tool. The concept was that the number of training stations could be compared with enrollment, cost, and demand to identify needed programs. To this end, the training station data proved meaningless.

TABLE 8

WORKER DEMAND AND SUPPLY 1977 - 1982

PROGRAM U.S.O.E. CODE	PROGRAM NAME	SUPPLY					DEMAND	NEED	OCCUPATIONAL TITLE
		PUBLIC TRAINING	PRIVATE TRAINING	NET-IN MIGRATION	OTHER TRAINING	TOTAL			
AGRICULTURE GROUP									
010100	Production Agriculture	2424							
010100	Farm Business Management	75							
010100	Dairy	20							
010100	Beef	81							
010100	Swine	22							
010100	Horses	49							
				240	505		3760		Farmers (Owners and Tenants)
					45		565		Farm Managers
				44			144		Farm Labor Supervisors
				458			2610		Farm Laborers (Wage)
	SUBTOTAL	2671		742	550	3963	7079	3116	
019900	Farrier (Horseshoer)	146	270			416	52	(364)	Blacksmith
019900	Animal Health Technology	25	170			195	707	512	Animal Caretakers Except Farm
010200	Agriculture Supplies and Services	91							
010200	Feed Mill Operations	20							
010200	Farm Cooperative Occupations	17							
				22	85		5		Farm Management Advisors
							79		Mixing Operators
				22			249		Agriculture Technicians
							15		Farm Service Laborers
							15		Millers, Grain, Flour and Seed
	SUBTOTAL	128		44	85	257	363	106	
010500	Ornamental Horticulture	361							
010500	Greenhouse	17							
010500	Landscaping	85							
010500	Nursery	3							
010500	Turf Management	62							
				22	100		1434		Gardners and Groundskeepers
	SUBTOTAL	528		22	100	650	1434	784	

TABLE 8

WORKER DEMAND AND SUPPLY 1977 - 1982

PROGRAM U.S.O.E. CODE	PROGRAM NAME	SUPPLY					DEMAND	NEED	OCCUPATIONAL TITLE
		PUBLIC TRAINING	PRIVATE TRAINING	NET-IN MIGRATION	OTHER TRAINING	TOTAL			
010600	Agriculture Resources	76							
010000	Wildlife	24							
010600	Forestry	12							
010700	Forestry Technology								
019900	Environmental Protection	15							
				65	1045		259		Foresters and Conservationists
	SUBTOTAL	127		65	1045	1237	259	(978)	
	GROUP TOTAL	3625	440	873	1780	6718	9894	3176	
ADVERTISING, PHOTO & GRAPHIC ARTS GROUP									
040100	Mass Media Technology	195							
				109	675		834		Editors and Reporters
				22	200		455		Public Relations Workers
				22	70		436		Advertising Salesworkers
	SUBTOTAL	195		153	945	1293	1725	432	
169900	Broadcasting	10	715		35	760	45	(715)	Radio & T.V. Announcers
170700	Commercial Art	386	330						
				44	5		61		Sign Painters
				44			571		Decorators & Window Dressers
				44	165		543		Painters & Sculptors
				65	15		484		Designers
	SUBTOTAL	386	330	197	185	1098	1659	561	
170900	Photography	205							
							309		Photographers
				22			886		Photo Process Workers
	SUBTOTAL	205		22		227	1195	968	
171900	Graphic Arts	928	35						
				22	30		417		Printing Press Operators
				10			285		Compositors & Type Setters
							19		Electrotypers & Stereotypers
							77		Photo Engravers & Lithographers
	SUBTOTAL	928	35	32	30	1025	798	(227)	
	GROUP TOTAL	1724	1080	404	1195	4403	5422	1019	

TABLE 8

WORKER DEMAND AND SUPPLY 1977 - 1982

PROGRAM U.S.O.E. CODE	PROGRAM NAME	SUPPLY					DEMAND	NEED	OCCUPATIONAL TITLE
		PUBLIC TRAINING	PRIVATE TRAINING	NET-IN MIGRATION	OTHER TRAINING	TOTAL			
SALES GROUP									
040200	Apparel and Accessories	668	1580	183		2431	3645	1214	Sales Workers, Apparel & Access.
041500	Personal Service	423	75	15		513	1243	730	Sales Worker, Personal Service
040600	Food Distribution	569		74		643	1527	884	Sales Workers, Food Distribution
040900	Hardware, Building Materials	145							
				52			602		Sales Workers, Hardware
				48			560		Sales Workers, Building Materials
	SUBTOTAL	145		100		245	1162	917	
041000	Home Furnishings	53	50	36	50	189	684	495	Sales Workers, Home Furnishings
040300	Automotive	233	55						
170399	Auto Services	485							
							49		Parking Attendants
				76			1440		Sales Worker, Automotive
	SUBTOTAL	718	55	76		849	1489	640	
041600	Petroleum	97							
170399	Auto Services	243							
				174			494		Garage & Gas Station Attendant
	SUBTOTAL	340		174		514	494	(20)	
041100	Hotel and Lodging	151	212						
				22	365		2534		Managers & Superintendents, Bldg.
							50		Baggage Porters and Bellhops
							116		Boarding House Keepers
	SUBTOTAL	151	212	22	365	750	2700	1950	
041700	Real Estate	205	13125						
				196	205		2845		Real Estate Agents & Brokers
							154		Real Estate Appraisers
	SUBTOTAL	205	13125	196	205	13731	2999	(10732)	

TABLE 8

WORKER DEMAND AND SUPPLY 1977 - 1982

PROGRAM U.S.O.E. CODE	PROGRAM NAME	SUPPLY					DEMAND	NEED	OCCUPATIONAL TITLE
		PUBLIC TRAINING	PRIVATE TRAINING	NET-IN MIGRATION	OTHER TRAINING	TOTAL			
041300	Insurance	24							
				240			1299		Insurance Agents, etc.
				22			287		Insurance Adjusters, etc.
	SUBTOTAL	24		262		286	1586	1300	
041800	Recreation and Tourism	177	365						
				44			377		Recreation Workers
							16		Ushers, Recreation, Amusement
				44			488		Attendants, Recreation
	SUBTOTAL	177	365	88		630	881	251	
040800	General Merchandise	2545	150	1005					
041200	Industrial Marketing								
041400	International Trade	3			65				
042000	Retail Trade	1038							
043100	Wholesale Trade	105							
040500	Floristry	62	1545						
							333		Demonstrators
							7622		Sales Clerks
							1342		Sales Workers, Retail
					2500		1786		Sales Management, Retail
							2050		Stock Clerks
							2475		Stock Handlers
					1005		1098		Buyers
							1662		Sales Construction
							318		Warehouse Workers
					660		958		Purchasing Agents
							1616		Sales Management Wholesale
							2031		Sales Representatives, Wholesale
	SUBTOTAL	3753	1695	1005	4230	10683	23291	12608	
	GROUP TOTAL	7226	17157	2231	4850	31464	41701	10237	

TABLE 8

WORKER DEMAND AND SUPPLY 1977 - 1982

PROGRAM U.S.O.E. CODE	PROGRAM NAME	SUPPLY					DEMAND	NEED	OCCUPATIONAL TITLE
		PUBLIC TRAINING	PRIVATE TRAINING	NET-IN MIGRATION	OTHER TRAINING	TOTAL			
FOOD SERVICES GROUP									
040700	Food Services	941							
172900	Quantity Foods	1080	1490						
090203	Food Services Supervisor	130		220	200		1824		Restaurant, Cafetoria Management
				414			10367		Waiters
				44			400		Bakers
				262			6691		Cooks
				87			1010		Meat Cutters, Butchers
				196			1207		Food Counter & Fountain
				65			788		Waiter Assistants
	SUBTOTAL	2151	1490	1288	200	5129	22287	17158	
090203	Bartenders		1540	95		1635	1837	202	Bartenders
	GROUP TOTAL	2151	3030	1383	200	6764	24124	17360	
INSTITUTION AND HOME MANAGEMENT GROUP									
093299	Institution and Home Management	133							
171100	Custodial	405							
				218			6409		Janitors and Sextons
				109			4800		Building, Cleaners, Exc.
				22			1082		Housekeepers
	SUBTOTAL	538		349		887	12291	11404	
	GROUP TOTAL	538		349		887	12291	11404	
TRANSPORTATION GROUP									
041900	Transportation	97							
				109			1097		Freight & Material Handlers
				109			888		Flight Attendants
				174			566		Ticket & Express Handlers

TABLE 8

WORKER DEMAND AND SUPPLY 1977 - 1982

PROGRAM U.S.O.E. CODE	PROGRAM NAME	SUPPLY PUBLIC TRAINING	SUPPLY PRIVATE TRAINING	SUPPLY NET-IN MIGRATION	SUPPLY OTHER TRAINING	SUPPLY TOTAL	DEMAND	NEED	OCCUPATIONAL TITLE
				87			2567		Delivery and Route Workers
	SUBTOTAL	97		479		576	5118	4542	
179900	Truck Driving		145						
				87 249 436			284 172 3108		Bus Drivers Taxi Drivers Truck Drivers
	SUBTOTAL		145	872		1017	3564	2547	
	GROUP TOTAL	97	145	1351		1593	8682	7089	
DENTAL GROUP									
070101	Dental Assistant	188	450			638	807	169	Dental Assistant
070102	Dental Hygiene	101				101	254	153	Dental Hygienist
070103	Dental Technician						40	40	Dental Lab Technician
	GROUP TOTAL	289	450			739	1101	362	
MEDICAL GROUP									
070203 070208	Medical Lab Technician Medical Lab, Other	139	125		300		230		Med. Lab. Technologists & Techs.
	SUBTOTAL	139	125		300	564	230	(334)	
070301	Nurse Associate Degree	1372		2980	1462	5814	4547	(1267)	Registered Nurses
070302	Nurse, Practical	1400		200	155	1555	2563	1003	Practical Nurses
070303	Nurse Aides	1119		218		1337	4929	3592	Nurse Aides, Orderlies, Attend.
070305	Surgical Technician	175			138	313	258	(55)	Surgical Technician

TABLE 8

WORKER DEMAND AND SUPPLY 1977 - 1982

PROGRAM U.S.O.E. CODE	PROGRAM NAME	SUPPLY: PUBLIC TRAINING	SUPPLY: PRIVATE TRAINING	SUPPLY: NET-IN MIGRATION	SUPPLY: OTHER TRAINING	SUPPLY: TOTAL	DEMAND	NEED	OCCUPATIONAL TITLE
070399	Ward Clerk	45							
070399	Medical Insurance Clerk								
070399	Medical Rec. Technician	15							
							189		Medical Records Technician
	SUBTOTAL	90				90	189	99	
070399	Psychiatric Technician	191			4	195	107	(88)	Psychiatric Technician
070501	Radiologic Technician	191				191	344	153	Radiologic Technician (X-Ray)
070599	Radiation Therapy	20			4	24	61	37	Radiation Therapist
070503	Nuclear Med. Technician	15			19	34	120	86	Nuclear Med. Therapist
070600	Ophthalmic Dispensing	10				10	440	430	Lens Grinders & Polishers
070901	Electrocardiogram Tech.	15			33	48	191	143	EKG Tech.
070903	Inhalation Technician	29							
070903	Inhalation Therapy	10							
					58		316		Inhalation Tech, Other
	SUBTOTAL	39			58	97	316	219	
070907	Emergency Medical Technician	975				975	1269	294	Emergency Medical Technician
	GROUP TOTAL	5751	125	3398	2173	11247	15564	4317	

CLOTHING MANAGEMENT, PRODUCTION & SERVICES GROUP

PROGRAM U.S.O.E. CODE	PROGRAM NAME	SUPPLY: PUBLIC TRAINING	SUPPLY: PRIVATE TRAINING	SUPPLY: NET-IN MIGRATION	SUPPLY: OTHER TRAINING	SUPPLY: TOTAL	DEMAND	NEED	OCCUPATIONAL TITLE
090202	Clothing Management and Production	260							
				44			210		Tailors
				65			1378		Checkers - Inspectors
				22			570		Dress Makers
							8		Dyers
				109			1567		Sewers and Stitchers
	SUBTOTAL	260		240		500	3733	3233	

TABLE 8

WORKER DEMAND AND SUPPLY 1977 - 1982

PROGRAM U.S.O.E. CODE	PROGRAM NAME	SUPPLY					DEMAND	NEED	OCCUPATIONAL TITLE
		PUBLIC TRAINING	PRIVATE TRAINING	NET-IN MIGRATION	OTHER TRAINING	TOTAL			
179900	Fabric Maintenance	18							
				44			850		Laundry & Dry Cleaners
							495		Clothing Ironers & Dressers
							80		Launders - PHH
	SUBTOTAL	18		44		62	1425	1363	
173300	Textile Production	22							
									Loom Fixers
				22			341		Cutting Operators
									Milliners
									Carding, Lapping & Combing Op.
							5		Knitters, Loopers, Toppers
							13		Spinners, Twisters, Winders
									Weavers
	SUBTOTAL	22		22		44	359	315	
173400	Leather Working	44							
					5		150		Shoe Makers - Repairs
							28		Shoe Making Machine Op.
	SUBTOTAL	44			5	49	178	129	
173500	Upholstery	259	15			274	321	47	Upholsterers
	GROUP TOTAL	603	15	306	5	929	6016	5087	

DATA PROCESSING, FINANCE AND CREDIT GROUP

PROGRAM U.S.O.E. CODE	PROGRAM NAME	PUBLIC TRAINING	PRIVATE TRAINING	NET-IN MIGRATION	OTHER TRAINING	TOTAL	DEMAND	NEED	OCCUPATIONAL TITLE
040400	Finance and Credit	49							
							332		Stock and Bond Agents
				87	985		2185		Bank Officers & Finance Management
				22			195		Collectors, Bill and Credit
	SUBTOTAL	49		109	985	1143	2712	1569	
140100	Accounting and Computing	4496	4100						
				22			894		Billing Clerks
				109			827		Estimators and Investigators
				523			8625		Bookkeepers

TABLE 8

WORKER DEMAND AND SUPPLY 1977 - 1982

PROGRAM U.S.O.E. CODE	PROGRAM NAME	SUPPLY					DEMAND	NEED	OCCUPATIONAL TITLE
		PUBLIC TRAINING	PRIVATE TRAINING	NET-IN MIGRATION	OTHER TRAINING	TOTAL			
				349	2130		3009		Accountants
				65			1279		Statistical Clerks
				22			466		Bookkeeping & Billing Machine Op.
							164		Calculating Machine Operator
							684		Payroll & Time Clerks
				65			1348		Bank Tellers
	SUBTOTAL	4496	4100	1155	2130	11880	17296	5415	
140299	Keypunch	1354		87		1441	865	(576)	Keypunch Operator
140299	Computer Operations	558				558	1236	678	Computer Operator
140203	Computer Programming	558	90						
				65			1061		Computer Programming
					260		654		Systems Analyst
	SUBTOTAL	558	90	65	260	973	1715	742	
	GROUP TOTAL	7015	4190	1416	3375	13346	23824	7828	

SECRETARY, STENO AND CLERICAL GROUP

PROGRAM U.S.O.E. CODE	PROGRAM NAME	PUBLIC TRAINING	PRIVATE TRAINING	NET-IN MIGRATION	OTHER TRAINING	TOTAL	DEMAND	NEED	OCCUPATIONAL TITLE
140300	General Clerical	15439							
140300	Word Processing	19							
140300	Other Office	995	890						
				234			7010		Typists
							190		Proof Readers
				22			90		Duplicating Machine Operators
				44			1565		File Clerks
							408		Office Machine Operator
				654			10307		Miscellaneous Clerks
	SUBTOTAL	16453	890	954		18197	19570	1373	
140700	Secretary, Steno	7667	3455	1046		12168	24490	12322	Secretaries
140700	Legal Secretary	82		22	88	192	1279	1087	Legal Secretaries
140700	Medical Secretary	27			170	197	520	323	Medical Secretaries

TABLE 8

WORKER DEMAND AND SUPPLY 1977 - 1982

PROGRAM U.S.O.E. CODE	PROGRAM NAME	SUPPLY PUBLIC TRAINING	 PRIVATE TRAINING	 NET-IN MIGRATION	 OTHER TRAINING	 TOTAL	DEMAND	NEED	OCCUPATIONAL TITLE
140700	Steno	34				34	465	431	Stenographers
070904	Medical Assistant	1087	835						
179900	Optometric Assistant	20							
				412			2881		Receptionists
	SUBTOTAL	1107	835	412		2354	2881	527	
	GROUP TOTAL	25370	5180	2434	258	33242	49205	15963	
MANAGEMENT GROUP									
040800	Marketing Management	20							
140600	Supervisory and Administration	621	670						
140200	Administrative Assistant	70							
140800	Clerical and Office Supervisor	40							
140300	Office Managers	9							
				22454	3373		36327		Management and Administrators
	SUBTOTAL	760	670	22454	3373	27257	36327	9070	
179900	Trade and Industrial Supervisors	67		255		322	4757	4435	Blue Collar Supervisors
	GROUP TOTAL	827	670	22709	3373	27579	41084	13505	
ELECTRICAL AND ELECTRONICS GROUP									
160107	Electrical Technician	376							
160108	Digital Electronics	5							
160108	Electronic Technician	2025							
160109	Computer Maintenance	5							
				67			982 370		Electric and Electronic Tech. Data Processing Machine Repairer
	SUBTOTAL	2411		67		2478	1352	(1126)	
160108	Industrial Electronics	139	90						
				87			2929 222 133		Telephone Line Workers Electrical Powerline Workers Winding Operators
	SUBTOTAL	139	90	87		316	3284	2968	

TABLE 8

WORKER DEMAND AND SUPPLY 1977 - 1982

PROGRAM U.S.O.E. CODE	PROGRAM NAME	SUPPLY					DEMAND	NEED	OCCUPATIONAL TITLE
		PUBLIC TRAINING	PRIVATE TRAINING	NET-IN MIGRATION	OTHER TRAINING	TOTAL			
160108	Radio and T.V.	834	945	44		1823	622	(1201)	Radio and TV Repair Workers
171002	Electricity	279		131	725	1135	1117	(18)	Electrician
173200	Stationary Energy Sources	17							
							54		Power Station Op.
				22			260		Stationary Engineer
	SUBTOTAL	17		22		39	314	275	
	GROUP TOTAL	3680	1035	351	725	5791	6689	898	

COMMERCIAL PILOTS GROUP

160601	Pilot Training	61	330	44		435	242	(193)	Commercial Pilots

PROTECTION AND SERVICES GROUP

160602	Firefighters	5							
160602	Fire and Fire Safety Technician	698							
				44			131		Firefighters
	SUBTOTAL	703		44		747	131	(616)	
160605	Criminal Justice	5							
160605	Police Science	1386	160		100				
160605	Corrections	5							
							21		Marshall and Constables
				22			632		Police and Detectives
							130		Sheriffs and Bailiffs
							653		Guards
	SUBTOTAL	1396	160	22	100	1678	1436	(242)	
	GROUP TOTAL	2099	160	66	100	2425	1567	(858)	

TABLE 8

WORKER DEMAND AND SUPPLY 1977 - 1982

PROGRAM U.S.O.E. CODE	PROGRAM NAME	SUPPLY					DEMAND	NEED	OCCUPATIONAL TITLE
		PUBLIC TRAINING	PRIVATE TRAINING	NET-IN MIGRATION	OTHER TRAINING	TOTAL			
MECHANICS GROUP									
010300	Agricultural Mechanics	43							
010300	Ag Power and Machinery	55							
							362		Farm Equipment Mechanics
	SUBTOTAL	98				98	362	264	
160101	Aircraft Mechanics (PP)								
160101	Aircraft Mechanics (AF)								
160101	Aircraft Mechanics (A&P)	354	455						
				91			218		Aircraft Mechanics
	SUBTOTAL	354	455	91		900	218	(682)	
160110	Electromechanical Tech.	101							
160112	Instrument Tech.				20				
160113	Mechanical Tech	194							
							45		Mechanical Technicians
	SUBTOTAL	295			20	315	45	(270)	
171200	Diesel Mechanic	125	645						
171099	Heavy Equipment Mechanic	103							
				22			112		R.R. Car Shop Repairers
				87	5		2067		Heavy Equip. Tech & Diesel
	SUBTOTAL	228	645	109	5	987	2179	1192	
170301	Body and Fender	710	635						
				87	15		210		Auto Body Repairers
					15		168		Painters, Manufact. Articles
	SUBTOTAL	710	635	87	30	1462	378	(1084)	
170302	Auto Mechanics	4817	3425	371	20	8633	2939	(5694)	Auto Mechanics
173100	Small Engine Repair	267							
173100	Motorcycle Mechanic		775						
179900	Ski Technology	23							
				44	15		724		Miscellaneous Mechanics
	SUBTOTAL	290	775	44	15	1124	724	(400)	

TABLE 8

WORKER DEMAND AND SUPPLY 1977 - 1982

PROGRAM U.S.O.E. CODE	PROGRAM NAME	SUPPLY					DEMAND	NEED	OCCUPATIONAL TITLE
		PUBLIC TRAINING	PRIVATE TRAINING	NET-IN MIGRATION	OTHER TRAINING	TOTAL			
	GROUP TOTAL	6792	5935	702	90	13519	6845	(6674)	
SURVEYING, MAPPING & DRAFTING GROUP									
160103	Drafting	987	605						
169900	Engineering Related	178							
160103	Architectural Tech.	484							
				153			1835		Drafters
	SUBTOTAL	1649	605	153		2407	1835	(572)	
160106	Civil Technology	137	35						
				44			572		Surveyors
				22			26		Civil Tech (Urban Planners)
							9		Civil Tech (Surveyor Assist.)
							51		Construction Inspectors
							560		Inspectors Public
	SUBTOTAL	137	35	66		238	1218	980	
	GROUP TOTAL	1786	640	219		2645	3053	408	
APPLIANCES, BUSINESS MACHINES AND WATCH REPAIR									
170200	Appliance Repair	235			5	240	486	246	Household Appliance Mechanics
169900	Heating and Air Conditioning	408	605						
169900	Refrigeration		100						
							662		Heating, Air Conditioning Mech.
	SUBTOTAL	408	705			1113	662	(451)	
170600	Business Machine Maintenance	28				28	422	394	Office Machine Repairers
172100	Watchmaking	46							
172100	Camera Repair		985						
				22	10		161		Jewelers and Watchworkers
	SUBTOTAL	46	985	22	10	1063	161	(902)	
	GROUP TOTAL	717	1690	22	15	2444	1731	(713)	

TABLE 8

WORKER DEMAND AND SUPPLY 1977 - 1982

PROGRAM U.S.O.E. CODE	PROGRAM NAME	SUPPLY					DEMAND	NEED	OCCUPATIONAL TITLE
		PUBLIC TRAINING	PRIVATE TRAINING	NET-IN MIGRATION	OTHER TRAINING	TOTAL			
CARPENTRY AND RELATED GROUP									
171001	Carpentry	1134							
					180		458		Roofers & Slaters
					10		349		Drywallers & Lathers
					30		66		Floor Layers Excluding Tile
				262	595		4183		Carpenters
							194		Carpentry Helpers
					5		172		Sawers (Millwright)
	SUBTOTAL	1134		262	820	2216	5422	3206	
171099	Heavy Equipment Operators	18							
					285				Operating Engineers
				87	5		559		Bulldozer Operators
				44			346		Crain, Derrick, Hoist Op.
				109	5		1856		Excavating, Grading, Etc. Op.
							225		Drillers, Earth
	SUBTOTAL	18		240	295	553	2986	2433	
171004	Masonry	153							
				44	120		382		Brick & Stone Masons
				22			133		Tile Setters
					10		65		Plasterers
					25		327		Cement & Concrete Finishers
	SUBTOTAL	153		66	155	374	907	533	
171099	Painting & Decorating	34		87	105	226	976	750	Painters, Construction & Maint.
171007	Plumbing	77		22	475	574	753	179	Plumbers & Pipefitters
171099	Glazing	3			55	58	285	227	Glazers
171099	Construction, Other	2248				2248	1729	(519)	Construction Laborers
171099	Roofers	6		22	180	208	458	250	Roofers and Repairs

TABLE 8

WORKER DEMAND AND SUPPLY 1977 - 1982

PROGRAM U.S.O.E. CODE	PROGRAM NAME	SUPPLY					DEMAND	NEED	OCCUPATIONAL TITLE
		PUBLIC TRAINING	PRIVATE TRAINING	NET-IN MIGRATION	OTHER TRAINING	TOTAL			
173600	Cabinet Making	140		65		205	196	(9)	Cabinet Makers
	GROUP TOTAL	3813		764	2085	6662	13712	7050	
MACHINE TOOL, MACHINE TRADES AND WELDING GROUP									
172302	Machine Shop	985							
172303	Machine Tool Operation	67							
				262	110		889		Machinist
							32		Pattern and Model Makers
				22			130		Precision Machine Op.
							119		Drill Press Operators
							388		Lathe & Mill Machine Op.
							400		Grinding Machine Op.
	SUBTOTAL	1052		284	110	1446	1958	512	
172305	Sheet Metal	23							
					315		597		Sheet Metal Workers
				22			50		Solderers
	SUBTOTAL	23		22	315	360	647	287	
172306	Welding	2576	280	87		2943	2446	(497)	Welders & Flame Cutters
172399	Tool and Diemaking	5			10	15	299	284	Tool and Die Makers
172399	Metal Trades Combined	52							
172399	Metal Trades, Other	81							
							100		Jig and Die Setter
							68		Riveters and Fasteners
					60		67		Boiler Makers
							132		Punch and Stamp Op.
							14		Engravers
							28		Forge and Hammer Op.
							33		Rollers and Finishers, Metal
							66		Filers and Polishers
					20		73		Metal Platers
							65		Molders, Metal

TABLE 8

WORKER DEMAND AND SUPPLY 1977 - 1982

PROGRAM U.S.O.E. CODE	PROGRAM NAME	SUPPLY					DEMAND	NEED	OCCUPATIONAL TITLE
		PUBLIC TRAINING	PRIVATE TRAINING	NET-IN MIGRATION	OTHER TRAINING	TOTAL			
				44			110		Furnace Tenders, Smelters
	SUBTOTAL	133		44	80	257	756	499	
	GROUP TOTAL	3789	280	437	515	5021	6106	1085	
COSMETOLOGY AND BARBERING									
172602	Cosmetology	1031	1075	109		2215	3057	842	Hairdressers & Cosmetologists
172601	Barbers	54	150	87		291	618	327	Barbers
	GROUP TOTAL	1085	1225	196		2506	3675	1169	
CHILD CARE GROUP									
090201	Child Care	745							
				22	485		3507		Child Care Workers (Except PHH)
							216		School Monitors
							1725		Child Care Wks. (Pvt. HH)
	SUBTOTAL	745		22	485	1252	5448	4196	
	GROUP TOTAL	745		22	485	1252	5448	4196	

The data itself was supplied by the public schools who also supplied enrollment data. The data covered more than 1600 programs and more than 250 schools or institutions.

Table 9 presents the training station data versus enrollment data. Column 1 contains the program code, and Column 2 contains the program title. Column 3 contains the number of enrollees by occupational objective, while Column 4 contains the number of training stations.

Confusion is the result of matching the two data sets. Some reasons why the data lacks meaning are:

1. Colorado has a quarter system at the postsecondary level, where students have open entry and open exit. At the secondary level a vocational dropout is replaced by a new enrollee as soon as the curriculum allows. As a result of this continuous in and out flow of students, enrollments exceed training stations in every major category.

2 Because of the cooperative nature of many Colorado programs and the varied option nature of many other programs, the data shows some full programs as having less than full enrollment, while options that don't exist as a separate program show enrollment.

3. Many postsecondary institutions enroll students in a vocational major without openings in the major courses. When an opening occurs, the student who has been taking academic subjects in preparation for vocational training enters the program. An example would be associate degree nursing at the Community College of Denver. There are about 100 students taking the academic courses required, but unable to enroll in the program. When an opening occurs, one of these students is inserted immediately. As a result, the nursing enrollment at C.C.D. exceeds the training stations for two reasons; i.e., the number of students with a nursing major waiting for an opening and the double head count of both a dropout and replacement for the same slot.

TABLE 9

TRAINING STATIONS VERSUS ENROLLMENT

CODE	PROGRAM	1975-76 ENROLLMENT BY OBJECTIVE	1975-76 TRAINING STATIONS
01	Agriculture Total[1]	5,572	5,100
010100	Production Agriculture	3,879	4,198
010200	Ag Supplies and Services	169	120
010300	Ag Mechanics	233	80
010500	Horticulture	543	532
010600	Resources	169	
010700	Forestry	10	
019900	Other Agriculture	569	170
04	Distributive Education Total	6,651	5,767
040000	Cooperative Distributive Education		4,630
040100	Mass Media	77	70
040200	Apparel and Accessories	383	20
040300	Automotive	118	
040400	Finance and Credit	106	20
040700	Food Services	1,140	
040800	General Merchandise	2,563	120
040900	Hardware, Building Materials	78	
041000	Home Furnishings	31	40
041100	Hotel and Lodging	212	200
041300	Insurance	12	
041500	Personal Services	324	
041600	Petroleum	52	
041700	Real Estate	379	
041800	Recreation	247	150
041900	Transportation	59	15
042000	Retail, Other	870	100
043100	Wholesale, Other	59	72

TABLE 9

TRAINING STATIONS VERSUS ENROLLMENT

CODE	PROGRAM	1975-76 ENROLLMENT BY OBJECTIVE	1975-76 TRAINING STATIONS
07	Health Education Total[3]	6,300	4,284
070101	Dental Assistant	197	188
070102	Dental Hygienist	151	80
070203	Medical Lab Assistant	145	62
070301	Nursing (Associate Degree)	1,069	580
070302	Practical Nursing	776	540
070303	Nurse Aide	746	471
070305	Surgical Technician	67	24
070399	Other Nursing	439	526
070501	Radiologic Technician	629	288
070503	Nuclear Medical Technician	25	40
070600	Ophthalmic	2	91
070903	Inhalation Therapy	199	62
070904	Medical Assistant	533	145
070907	Emergency Medical Technician	1,255	170
079900	Other Health		997
09	Home Economics Total	2,303	3,447
090201	Child Care	1,167	605
090202	Clothing Management	227	305
090203	Food Management	830	843
090205	Inst. & Home Mgmt. & Supp. Services	79	
090299	Cooperative Home Economics		1,694
14	Business and Office Total	33,785	31,783
140100	Accounting and Computing	5,493	4,306
140200	Data Processing	2,554	2,279
140300	Clerical	15,506	15,268
140700	Secretarial	7,016	9,072

TABLE 9

TRAINING STATIONS VERSUS ENROLLMENT

CODE	PROGRAM	1975-76 ENROLLMENT BY OBJECTIVE	1975-76 TRAINING STATIONS
140800	Supervision	3,216	964
16	Technical Education Total	10,274	6,619
160101	Aeronautical Technician	282	400
160103	Architectural Technician	330	241
160106	Civil Technician	438	251
160107	Electric Technician	336	129
160108	Electronic Technician	3,298	2,686
160109	Electromechanical Technician	164	32
160113	Mechanical Technician	133	90
160601	Commercial Pilot	70	50
160602	Fire and Safety	1,457	1,000
160605	Police Science	1,341	625
169900	Technical Other	2,457	1,115
17	Trade and Industry Education		
170200	Appliance Repair	345	174
170301	Auto Body	1,406	1,427
170302	Auto Mechanics	4,298	3,687
170399	Auto Services	829	107
170600	Commercial Art	643	211
170900	Photography and Related	509	308
171001	Carpentry	883	980
171002	Electricity	152	120
171004	Masonry	166	254
171007	Plumbing	75	102
171099	Other Construction	1,795	630
171100	Custodial	556	76
171200	Diesel	320	115

TABLE 9

TRAINING STATIONS VERSUS ENROLLMENT

CODE	PROGRAM	1975-76 ENROLLMENT BY OBJECTIVE	1975-76 TRAINING STATIONS
171300	Drafting		
171400	Electrical	499	93
171600	Fabric Maintenance	16	5
171700	Foremanship	37	100
171900	Graphic Arts	1,012	944
172100	Instrument	40	18
172302	Machine Tool	54	40
172302	Machine Shop	889	1,131
172305	Sheet Metal	100	393
172306	Welding	2,974	2,137
172399	Metal, Other	254	211
172601	Barbering	37	46
172602	Cosmetology	858	847
172900	Quantity Foods	940	18
173100	Small Engine	1,108	760
173200	Stationary Energy	13	30
173300	Textile Production	36	
173400	Leatherworking	36	
173500	Upholstering	366	92
173600	Cabinetmaking	100	51
179900	Other T & I	3,828	2,086

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[1] Many Production Agriculture programs have service, mechanics, resources, horticulture, etc., options. As a result, some training stations in Production Agriculture can be training stations in other agriculture areas.

[2] The majority of distributive training stations in Colorado are found in Cooperative programs. The objectives of cooperative students range over all distributive occupations. As a result, cooperative enrollment is distributed over a wide variety of U.S.O.E. Codes.

[3] Health programs are frequently found at the postsecondary level where large numbers of students may drop out a quarter or several quarters and then return to complete. In the "Other Health" area, enrollments are transferred to a regular program as openings occur.

Possibly a few rural schools in Colorado which are not close enough to an area school to send students and a few exotic programs which appeal to only a select group of students can be examined on a training station versus enrollment basis. The vast majority of schools and programs are simply flooded with vocational students, and any openings are vacant for only a few days.

Common Cost Data

Initially, the project staff attempted to establish ways to gather data on indirect costs which could be added to direct program costs. This proved impossible to do without changing the accounting systems of local schools to a uniform procedure, and even then the costs would vary widely from type of school to type of school.

The committee of educators which had been formed to study this problem finally reached two conclusions which are paramount to future endeavors in this area. These conclusions were:

1. The only real common costs of vocational education are direct costs.
2. Adding an estimate of indirect costs to direct costs would only cloud the valid data available.

Direct cost data are reported by program by local administrators in Colorado annually. This cost data includes (1) salaries and benefits, (2) equipment costs, (3) books, supplies, and teaching materials, (4) transportation costs, and (5) contract costs.

In Table 10, data is reported on a cost per head count per level. (Note: For state purposes, cost data is reported in a wide variety of forms.) Column 1 contains program code, while Column 2 contains program title. Column 3 contains cost per head count for secondary students, and Column 4 contains cost per head count for postsecondary students.

Table 10

Common Cost Data by Program

Program Code	Program Title	Annual Common Costs Only	
		Secondary Cost/Head Count	Postsecondary Cost/Head Count
010100	Production Agriculture	553.03	316.25
010200	Ag Services and Supply	800.00	582.34
010300	Ag Mechanics	542.50	855.55
010500	Horticulture	877.55	571.60
010600	Resources	860.42	
010700	Forestry		
019900	Other Ag	860.42	
040100	Mass Media	350.03	
040200	Apparel and Accessories	916.50	183.91
040300	Automotive	350.03	1,154.47
040400	Finance and Credit	350.03	637.94
040500	Floristry	350.03	
040700	Food Service	350.03	
040800	General Merchandise	818.00	426.74
040900	Hardware, Building Materials	350.03	688.78
041000	Home Furnishings	350.03	354.55
041100	Hotel and Lodging	350.03	385.67
041300	Insurance	200.00	600.00
041500	Personal Services	350.03	1,458.34
041600	Petroleum	350.03	
041700	Real Estate	350.03	213.16
041800	Recreation	350.03	513.28
041900	Transportation	350.03	523.34
042000	Retail, Other	548.96	710.00

Table 10

Common Cost Data by Program

Program Code	Program Title	Annual Common Costs Only	
		Secondary Cost/Head Count	Postsecondary Cost/Head Count
043100	Wholesale, Other	350.03	
070101	Dental Assistant	846.42	1,529.61
070102	Dental Hygienist		2,897.50
070203	Medical Lab Assistant	220.78	952.76
070301	Nursing (Associate)		1,313.23
070302	Practical Nursing		1,734.85
070303	Nurse Aide	684.94	274.04
070305	Surgical Technician		820.00
070399	Other Nursing		267.31
070501	Radiologic Technician		720.22
070503	Nuclear Medical Technician		1,545.46
070599	Other Radiologic		1,562.50
070600	Ophthalmic	1,565.00	434.29
070903	Inhalation Therapy		1,564.83
070904	Medical Assistant		448.35
070907	Emergency Medical Technician		183.05
090201	Child Care	1,002.63	404.38
090202	Clothing Management	1,218.66	125.20
090203	Food Management	777.27	305.62
090205	Institutional & Home Mgmt.	849.30	124.12
140100	Accounting	312.22	267.97
140200	Data Processing	939.00	342.41
140300	Clerical	376.78	527.25
140700	Secretarial	464.22	307.26
140800	Mid Management		316.57

Table 10

Common Cost Data by Program

Program Code	Program Title	Annual Common Costs Only Secondary Cost/Head Count	 Postsecondary Cost/Head Count
160101	Aeronautical Technician	840.57	
160103	Architectural Technicial		605.22
160106	Civil Technician	489.62	733.09
160107	Electrical Technician	757.25	
160108	Electronic Technician	771.60	373.40
160109	Electromechanical Technician	1,688.42	1,429.87
160113	Mechanical Technician		399.90
160601	Commercial Pilot		1,258.77
160602	Fire and Safety	985.47	92.20
160605	Police Science	856.24	141.76
169900	Other, T & I	1,150.20	249.86
170200	Appliance Repair	873.06	372.06
170301	Body and Fender	746.27	610.97
170302	Auto Mechanics	555.01	429.26
170399	Auto Services	870.79	623.97
170600	Business Machine Maintenance	1,078.86	788.30
170700	Commercial Art	640.80	345.41
170900	Photography	852.26	423.46
171001	Carpentry	1,203.26	529.57
171002	Electricity	1,196.07	225.74
171004	Masonry	1,102.89	371.78
171007	Plumbing	1,740.21	345.98
171099	Construction and Maintenance	881.86	934.06
171100	Custodial	723.47	518.30

Table 10

Common Cost Data by Program

Program Code	Program Title	Annual Common Costs Only	
		Secondary Cost/Head Count	Postsecondary Cost/Head Count
171200	Diesel	1,547.45	720.74
171300	Drafting	623.90	448.50
171400	Industrial Electronics		359.12
171600	Fabric Maintenance	3,400.00	
171900	Graphic Arts	1,035.13	490.31
172100	Instrument Repair	7,008.50	290.02
172302	Machine Shop	985.63	501.10
172303	Machine Tool	893.98	
172305	Sheet Metal	1,892.54	872.42
172306	Welding	863.44	511.05
172399	Metal, Other	1,045.14	
172601	Barbering		759.59
172602	Cosmetology	891.57	845.27
172900	Quantity Foods	956.50	
173100	Small Engine	811.94	609.20
173400	Leatherworking	4,141.50	273.41
173500	Upholstering	691.36	155.93
173600	Cabinetmaking	715.17	
179900	Other, T&I	549.49	1,065.79

An analysis of the data indicates wide discrepancies between program types, and examining the base data (not presented) shows discrepancies between similar programs of the same type. Examples of factors which influence cost variations follow:

1. Teachers' salaries. A new teacher may receive less than 60 percent of the amount paid an experienced teacher.

2. Equipment costs. Equipment for a machine shop will greatly exceed the equipment costs of a cooperative distributive program.

3. Transportation costs. Rural districts may have high costs per student when sending students to outside sites for training.

4. Supplies and materials. A computer programmer program will have relatively high supplies costs.

5. Contract costs. Schools which contract part of their training with other organizations will have high contract costs and will probably have low costs in other areas.

Result of Data Interface

The data interface achievements of the project are discussed in this section of the report. Data usage (another form of result) is discussed in Part 4, Evaluation.

Data in the system is presently interfaced using three approaches. The first and least sophisticated approach uses hand calculations. The second approach is batch mode, where two or more files are organized in similar order, combined by reading the files simultaneously and merging by matched records. The third approach uses the commercial data base management system and accesses matched records as needed in interactive mode.

Colorado's ultimate goal is to have all data bases or files established on the commercial data base management system. This goal will be achieved over the next two years at state expense.

The present status of vocational education data bases in Colorado with projections for the future are as follows:

1. Demand data is hand interfaced with supply data only. While the approach is technically primitive, the concept is complex. Because of numerous exception procedures, the demand supply interface will probably be organized in interactive mode after all other interfaces have been completed.

2. Like demand data, supply from sources other than public vocational training is presently interfaced by hand. The principal use for planning and administration is in the worker demand and supply interface. As indicated earlier, this interface will be the last to be established in interactive mode, due to its complexity.

3. Public vocational student enrollment and completion data is established in batch mode and test interactive mode. The data can be interfaced with any other data base in the system; e.g., cost data, program data, teacher data, training station data, etc. With the exception of demand data and other supply data, interfaces are automated in batch mode. Due to the size of the student file, only a summary by program will be established in interactive mode when all work is complete.

4. Public vocational placement (follow-up) data is established in batch mode and can be interfaced through automation with any data bases in the system except demand and non-public supply. It also has been established in test interactive mode. Eventually this file will be permanently merged with enrollment and completion data and form a part of the summary interactive file mentioned in 3 above.

5. The training station data was established in batch and interactive modes. Due to the extensive number of parameters which impact this data and the subsequent need for interpretation, this data base has been removed from the system. Colorado planners and administrators see little use for this data as presently organized; i.e., without extensive parameters to explain local situations.

6. Common cost data is established in interactive mode with segments of other files such as enrollment by sex. It presently can interact with teacher data and has batch mode connections with most other data bases. It was established first, since answers to fiscal questions constitute the most pressing need. As indicated in Part 4, this data base has become an increasingly significant management data base over the past two years.

7. Teacher data is also established in interactive mode. Initially, this data base was established to test the commercial system for other data bases, since it had characteristics common to many and was relatively small (7,000 records). During testing phases it proved so popular with state staff that it was not replaced during implementation. Again, interaction between this data base and most other data bases can be achieved interactively or in batch mode.

The above description of data interface achievement has revolved around approaches. One other aspect must be mentioned to complete the discussion. Interface keys must be consistent and meaningful.

The keys selected for the Colorado interface system were LEA program type and level. These keys were common to all data bases except worker demand and some supply. The keys, of course, required common codes; e.g., an LEA must be identified by a single code throughout the system.

The project staff developed common codes for LEA's program types and levels. These codes are unique to Colorado but can be converted to U.S.O.E. Codes or any other set of codes through a conversion matrix. This is possible by organizing Colorado codes for the smallest possible unit.

The complexity of the worker demand - supply interface was a result of uncommon codes for demand and some non-public supply. Presently these elements have been assigned crosswalk codes which allow conversion to common codes. However, this crosswalk will change as improvements are identified.

In brief summary, Colorado M.I.S. files can now be interfaced. The interface may utilize any one of three approaches--hand calculated, batch mode, or interactive mode. Plans have been developed to establish all files in interactive mode within two years. Test and implementation results indicate that this is not an impossible goal.

PART 4

Evaluation

Because the purpose of the project was the modification and continued development of a data collection and delivery system, the evaluation revolved around data usage and administrative satisfaction. These two factors can be examined both objectively and subjectively. The project staff used both approaches, and the evaluation results are presented in this part of the report.

Subjective Evaluation

Subjective evaluation depends upon determining the opinion of persons not involved in the system development process. These persons could have been data users, data suppliers, or persons completely outside the Colorado Vocational Education system. The project staff used all three of these types of persons in the subjective evaluation process.

Data users who were involved in the evaluation process were: the State Director, the Assistant Director of the Fiscal and Information Services Branch, the Assistant Director of the Educational Services Branch, the Manager of the Planning Unit, and the Supervisor of the Fiscal Section. These persons either were or represented major users of the Interface System.

They were asked to respond to the following questions (since the Interface Project produced the major changes in the MIS approach in Colorado between 1975 and 1977 and since these persons identify project activities as MIS activities, the questions were asked in terms of MIS activities):

1. How would you compare present overall MIS activities with overall

MIS activities two years ago in terms of accuracy of data, usefulness of data, and access to data? Please briefly explain your answers. (Note: This question relates to all objectives.)

2. What do you think about the Worker Demand and Supply Interface in terms of accuracy and usefulness? Please explain your answers. (Note: This question relates to objectives 1, 2, and 5.)
3. What do you think about the program cost data from the VE-115's in terms of accuracy and usefulness? Please explain your answers. (Note: This question relates to objectives 3 and 4.)
4. What do you think about training station data in terms of accuracy and usefulness? Please explain your answers. (Note: This question is related to objective 4.)
5. Do you feel that state staff members have improved their ability to use data due to MIS activities over the past two years? Please explain your answers. (Note: This question relates to objective 6.)

The opinion of the data users was unanimous on Question 1. The MIS Section had made extensive progress in data accuracy, data usefulness, and data availability over the past two years. Comments were similar to "There is no comparison--the entire MIS service is much better."

Data users were also unanimous on Question 2. The Worker Demand and Supply Interface was reasonably accurate and very useful. No comments were made about Industrial Training or net in-migration data. One user pointed out that the data must be viewed as "the best estimates available" and that any one category "could be incorrect due to future economic changes."

Data users were positive about the program cost data as reflected by Question 3. Comments such as "much better than before," "Now codes are consistent," and "It provides a good planning base" were found in every response. Users expressed a need for caution when comparing different programs on a cost basis because "situations are different" and "every program has its own needs."

Data users were not enthusiastic about using Training Station Data in the administration process. Typical comments were "It can't be measured in a meaningful way," "Circumstances won't let all needed programs be full," "There is no real way to use the data," and "This is an unnecessary data burden on local agencies."

Data users felt that the majority of the state staff were using more data in the decision-making process. Typical comments were "I'm using MIS more and more as I find new applications," "There are some uses I never thought of," "We have used more data in the past two years than ever before," and "It sure is nice to know more about what is going on in the field." Some negative comments were "Some people don't want to use data to plan," and "People change their minds about data slowly."

Data suppliers involved in the evaluation process included local directors from the largest three secondary districts (Denver, Jefferson County, and Colorado Springs) and the two largest community colleges in the state (the Community College of Denver and El Paso Community College).

These people were asked the following questions (again, these administrators identified the project activities as MIS activities, and questions were worded to fit the situation):

1. Has the MIS data burden lessened in the past two years? Please explain your answer.
2. How does the quality of data reported from your agency/institution compare with the data reported two years ago? Please explain your answer.
3. Do you prefer the data collection system used in the past two years over the data collection system used before that time? Please explain your answer.

Data suppliers unanimously reported that the new system of collecting data had decreased their data burden, had increased accuracy, and had replaced an obsolete system. Typical comments were "We can use the data at our level," "Now we know what we're doing," "It still takes a long time but it's better," and "Thank goodness the old system is gone."

There were three evaluations by persons outside Colorado during the course of the project. In the early summer of 1976, the U.S.O.E. conducted a management audit of the Colorado State Board; in late summer of 1976, the Center for Vocational Education in Ohio conducted an evaluation of the Colorado MIS; and in the spring of 1977 a management consulting group evaluated the State Board organization.

The U.S.O.E. Management Audit Team was in Colorado from June 28, 1976, through July 2, 1976. During this period, auditors were with MIS (project) staff for four days. In addition, auditors in other areas continually asked for information which was provided by the MIS Section. On July 2, 1976, the state staff was informed that the MIS Section had been found to be exemplary.

On September 15, 1976, the project staff met with a Blue Ribbon Committee on vocational education MIS operations assembled by the National Center in Ohio to evaluate vocational MIS's across the nation. As a result of this meeting and the discussion, Colorado was reported as having one of the top five vocational MIS systems in the nation.

In April of 1977 a selection group of management experts were assembled by the Colorado State Director. The purpose of this group was to examine the operation of state vocational administration and make recommendations for improvement. They found that the state staff was positive about MIS activities. The direct quote from their report was "State staff made many positive remarks about MIS Section." They further indicated several areas where improvement could be made including improved cooperation with the Comprehensive Program Review Section. (Note: This cooperation has since been established by formal written agreement.)

Several other informal subjective evaluations have been made. First, and most important, the system developed by the project staff has been continued without project funds. Second, the project staff has not received a complaint about the data collection system from the field in more than four months. Third, more than 25 other states have visited Colorado to examine the system.

In summary, the subjective evaluation indicated data users feel that MIS activities have improved significantly during the duration of the project. Data suppliers are happier with the new system than the old and feel that the quality of data has improved. Outside experts agree that Colorado now has an exceptional MIS system, which has developed during the course of the project. Other states feel that exploring the Colorado system is worth a trip to Colorado, and project activities have been continued with non-project funds.

Objective Evaluation One

Probably the most meaningful measure of administrative satisfaction with a system, data reliability, and timeliness of response is the usage of the system. Objectively, the number of data requests (and responses) and the average turnaround time should provide a useful evaluation of the project.

Figure 3 presents a monthly report of jobs completed by total, batch, and CRT categories. (CRT is the difference between total and batch.) Linear regression indicates that the line which best fits the data is $Y=2.55X + 21.86$, where Y is the number of jobs and X designates the month (from 1 to 20). The indication is that job production has risen by 2.3 jobs per month over the 20 months covered by the project.

There are several problems with this analysis. First, the first month recorded is a traditionally slow month while the last month recorded is a traditionally busy month. Second, there are substantial fluctuations on a month-by-month basis. For example, April is traditionally a busy month with State Plan preparation and legislative activity. February, on the other hand, is a traditionally slow month with fewer work days and more holidays and a significant increase in annual leave.

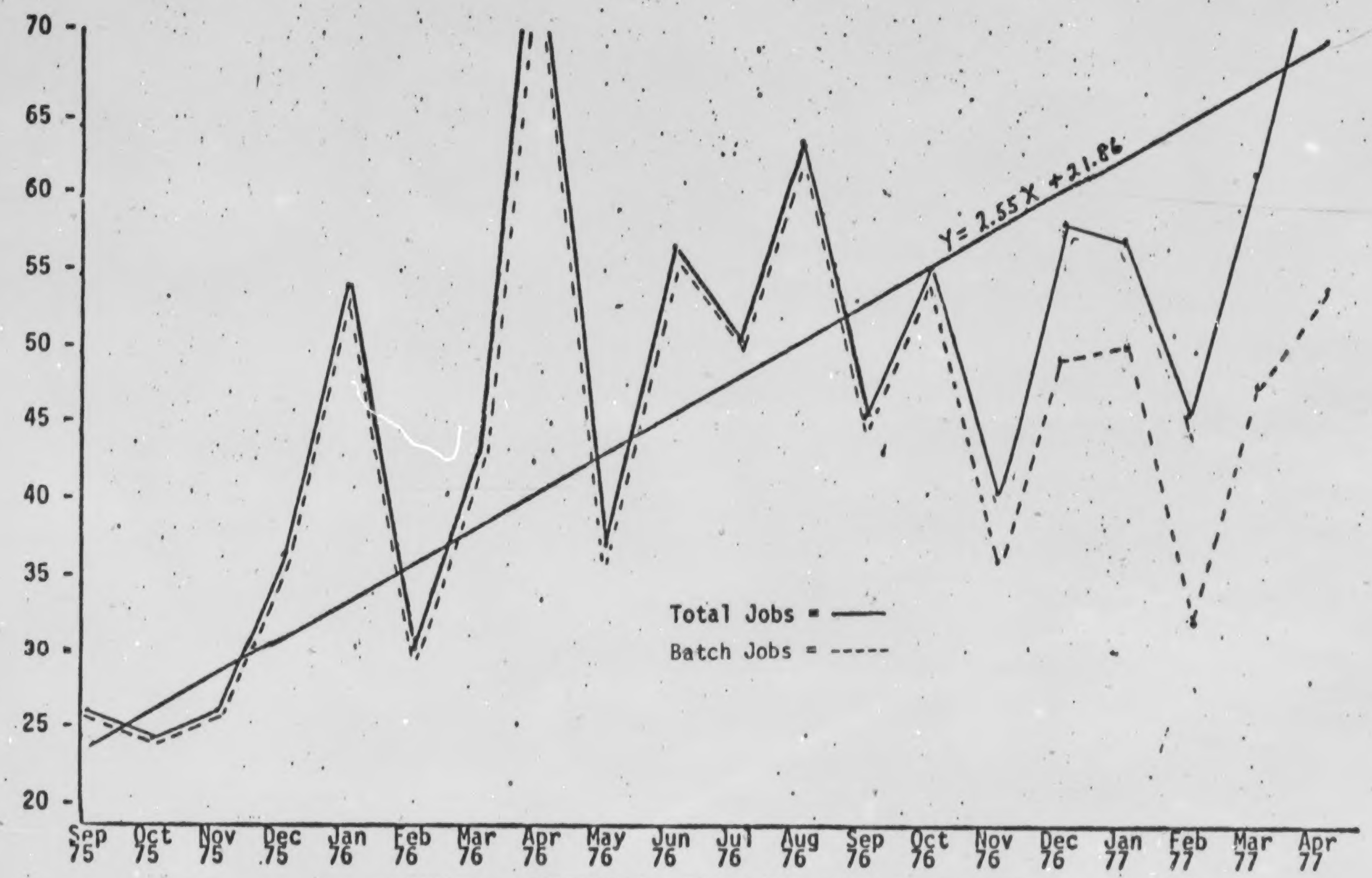


FIGURE 3 - MONTHLY JOB PRODUCTION DURING THE PROJECT

Additionally, such factors as calendar year changes, the CVA Convention, MBO reviews, and the annual staff retreat effect job production. It is interesting to note that there seems to be a downward trend in batch jobs beginning in November of 1976 when interactive (CRT) processing was introduced to the staff.

Given the analysis and its limitations, it is probably safe to say that the project has had a significant impact on job production in the past two years. It would not be realistic to set any given value on that impact. Further, job production obviously reflects job requests while job requests reflect usability of the system. Therefore, it is also probably safe to say that the project has had a significant impact on the usefulness of data. Finally, it is not possible to differentiate usefulness into improved accuracy, faster turnaround, more meaningful data, etc.

A second factor which can be measured is turnaround; i.e., the time from data request to data available. When the project started, batch jobs took an average of 45-plus working hours to turn around. When the project ended, turnaround per batch job took 11.3 working hours. Interactive (CRT) jobs have, of course, immediate turnaround.

In summary, job requests and job production have increased significantly since the project started. Turnaround time, a factor in job production, has decreased dramatically. It seems safe to say that the project has had a significant positive impact on MIS at the Colorado State Board.

Objective Evaluation Two

Uses of the data, as indicated, are numerous. Probably the most obvious use is found in the Colorado State Plan for Vocational Education. Fiscal, program, and enrollment data for five years by LEA constitute the entire annual plan. The five-year plan is based on MIS data. In the section called "Regular Vocational Programs" the plan projects regular vocational programs on an analysis of the Worker Demand-Supply Interface found in

Table 8 in this document. Appendix C presents this section of the State Plan in total.

Other new uses of data include a check for duplicate enrollments, checks for teacher certification, payments for adult training, evaluations of program performance, checks for student objective versus program type, an enormous number of fiscal reports, and sex and ethnic origin reports. When the project started, the MIS Section prepared 15 different standard reports annually. Now, at state staff request, the MIS Section prepares more than 100 standard reports annually.

PART 5

SUMMARY, ANALYSIS, CONCLUSIONS, AND RECOMMENDATIONS

OBJECTIVE: Expand worker supply data to include industry training data

There are several large gaps between the demand for and the supply of qualified workers for Colorado industry. If these gaps represent real jobs, then industry must be training large numbers of workers for entry-level employment, since essential work must be accomplished for industrial growth to continue as it has in Colorado.

Apparently industrial training is usually informal (OJT) in nature, since formal (classroom) training in Colorado is generally designed to (1) upgrade old employees in their present jobs, (2) familarize new employees with company policies and procedures, or (3) meet employees' avocational needs. Employers indicate that OJT training occurs when qualified workers are not available. This type of training probably would not occur if industry could hire qualified workers.

Informal (OJT) training is not, therefore, a supply source in the interface sense because it increases or decreases dependent upon other supply sources. In other words, if other sources could not meet any demand, then informal training would be the total supply source; and if other sources met all demand, then there would be no informal training.

The test survey of Colorado industry indicated that employers provide very little formal preparatory training. They expect to hire employees with at least entry-level skills. As a result, a survey of all industry to identify all formal preparatory training would contribute very little to the supply-demand interface and would probably not be cost effective.

Since informal (OJT) industrial training is not a supply source in the interface sense and since formal (classroom) industrial training is generally not designed to be a supply source, only limited efforts should be made to collect supply data from industry. Resources should be allocated to other data collection efforts which impact the supply picture to a much greater extent.

OBJECTIVE: Expand worker supply data to include
net in-migration data

In-migration, on the other hand, is a significant supply source in a state like Colorado, where the population is growing rapidly. It cannot be assumed, however, that every occupation is impacted equally by this supply. The data must be examined on an individual occupation basis.

In-migration data by occupation is not systematically collected by any state or federal agency on an annual basis. Unfortunately, the knowledge that Colorado has significant in-migration, as indicated by several state and federal agencies, does not help in determining worker in-migration supply by occupation.

The most reliable data source for in-migration by occupation data is the U. S. Census for 1970. The information contained in this data base reflects persons who lived in Colorado in 1965 and not in 1969 and persons who lived elsewhere in 1965 and in Colorado in 1969 by 1969 occupation. The difference in these two figures for each occupation is an estimate of net in-migration for the five-year period. Data for Colorado indicates that this difference is almost always positive or that in-migration is usually greater than out-migration.

Updating in-migration rates for the 1977-81 period is possible using present industry growth rates and present population growth rates which are available. The updated information is, of course, only an estimate but is probably the best possible information of this type available.

Since in-migration is a major worker supply source and since the data can be estimated economically, Colorado should include supply data of this type in its worker demand-supply interface. Further, since the 1970 Census is the best available data base, it should be used with other in-migration information to project worker in-migration supply.

OBJECTIVE: Interact between worker demand data and worker supply data to output net worker needs data

Given adequate demand data supplied by the Colorado Employment Security Agency, an interface of worker demand and supply data still required the improvement of Colorado public supply data as well as the inclusion of in-migration data and applicable formal industrial training data. This improvement involved the application of some basic data systems principles and was characterized more by time-consuming efforts than by complex problems.

The interface itself was a different story. Data from different sources are rarely compatible and data for the interface was no exception. As indicated, supply and demand data were available or could be collected. Logical units of in-migration, demand, institution, and apprenticeship data were jobs or job identified. Logical units of higher education data were curriculum majors. Logical units of public and private vocational training were vocational program completers.

Conversion of logical units to compatible units requires the subjective opinion of vocational experts who are familiar with both jobs and training, since trade-offs must be made where one program trains for several jobs or one job is served by several programs. Because of these trade-offs the Colorado interface is bi-level with the closest possible match indicated with a cluster and other close matches indicated by a group of clusters.

The evaluation process indicated that a worker demand and supply interface can be developed which meets the need of planners. Further, when this interface is the product of experts from the state, the usefulness is increased, since administrators understand the data and it reflects the curricula taught. Colorado should continue to prepare an interface of worker demand and supply data similar to that developed in this project.

OBJECTIVE: Interact worker needs data, finance data, and training station data; provide the data and analyses to planners and decision makers for program decisions

This lofty objective was accomplished. However, the interaction proved valueless to administrators, since the data was barely interpretable. A look at the possible arrangements of data provides insight into the interpretation problem. It would seem to be obvious that a program with a high need, a low number of training stations, and a low cost should be initiated. It also seems obvious that a program with a low need, high costs, and many vacant training stations should not be implemented. Given that need can be classified as high, average, or low, that cost can be classified as high, average, or low, and that training station vacancies can be classified as many, average, or few, then there are two obvious decision possibilities and 25 unresolved decision possibilities. Add to this the possibility that the first program may have a low placement rate and the second program may have a high placement rate, and there is complete confusion.

Efforts spent in achieving this objective were not a total loss, however, as the following points became clear for the first time:

1. Net worker needs as such can be misleading. A much more meaningful interpretation is jobs per available worker.
2. Training station data has very little use in the planning process except at the individual program level.
3. Cost per enrollment, FTE, completion, placement, etc., can be misleading when comparing different types of programs and even programs

of the same type. For example, should a successful program be closed because students must be bused or because the teacher has reached the top of the salary schedule through advanced degrees and experience? Only field supervisors who are familiar with local situations should use this type of data.

4. Administrators need a bottom line instead of a complex interface of data. The bottom line could be maximum placement, optimum use of funds, etc. The route to a bottom line would involve much more complex analyses than attempted in the project under this objective. Possible approaches would be linear programming or simulation, both of which are now being explored in Colorado at State expense.

OBJECTIVE: Develop and implement an inservice training program for users

An inservice training program for users was developed and implemented during the project period. Also during the period, data usage tripled. It might be concluded that the inservice was an outstanding success. In reality, the training probably had some impact; however, it is also probable that the overall project influenced usage to a much greater extent.

Data accuracy and availability appear to impact data usage greatly. This conclusion is not based on hard evidence but rather on comments of state staff obtained during the various subjective evaluations.

As stated earlier, vocational administrators need bottom line data rather than complex interfaces of data. This does not mean that limited interfaces such as cost per enrollment or cost per completion are not useful. They are. This means that administrators can work with data that answer such questions as "If this happens, what happens to enrollment?" To reach this level of analysis, sophisticated data treatments such as linear programming and simulation need to be developed.

Colorado should proceed on the path set forth during the project; i.e., improvement of data bases, common coding, the development of a data base management system for limited interfaces, and the continued development of a worker supply and demand report which provides bottom line figures. In addition, Colorado should continue the development of linear programming and simulation systems which ultimately answer questions of the if-then nature.

PURPOSE: Design a software data management system capable of interacting the various data files that make up the vocational education data base.

This purpose has been achieved. Necessary data elements have been defined; data collection systems which meet both local, state, and federal needs have been developed; and turnaround time for data requests has been drastically reduced.

Data Base Management has been a resounding success in Colorado. Evaluations indicate administrative support for data that is accurate and timely. Job requests have tripled during the project period.

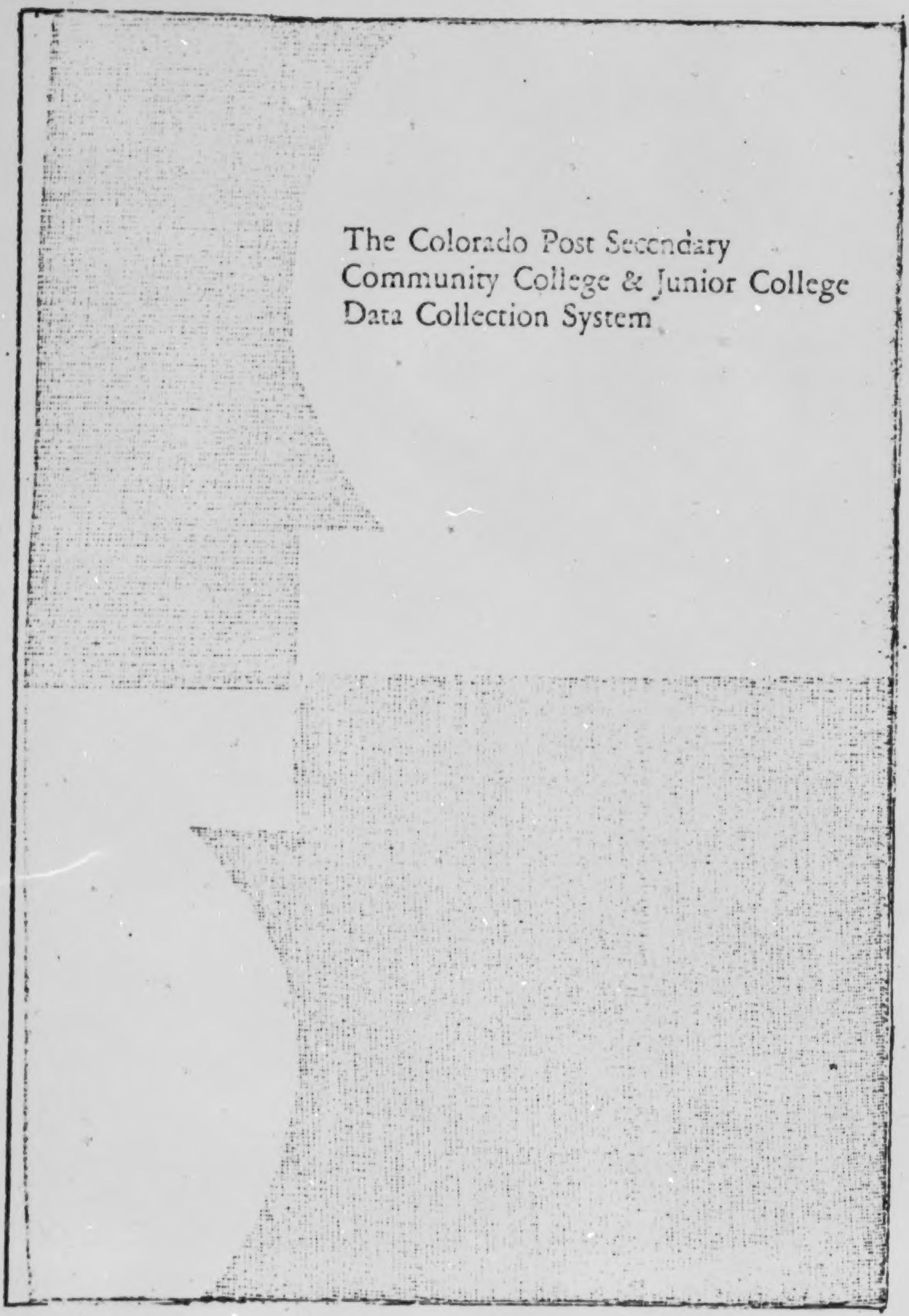
More than eighty percent of all data in the Colorado data system can now be interfaced. Many elements can be accessed in batch mode.

The decision to use a commercial data base management system proved valid. Requests in interactive mode have increased dramatically as users become familiar with the possibilities.

The Colorado MIS Section should continue establishing data bases on ADABAS using the schedule presented earlier. In addition, other data bases should be explored in terms of interactive applications. Examples or other applications are (1) equipment inventories, (2) personnel records, (3) voucher payments, and (4) budgeting systems.

APPENDIX A

POSTSECONDARY DATA COLLECTION SYSTEM



The Colorado Post Secondary
Community College & Junior College
Data Collection System

APPENDIX A - POSTSECONDARY SYSTEM

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THE COLORADO POST SECONDARY
(COMMUNITY COLLEGE AND JUNIOR COLLEGE)
DATA COLLECTION SYSTEM (EFFECTIVE JULY, 1976)

PURPOSE: To gather data items on students from local schools which are needed at the state and national level for occupational education decision making.

GOAL: The system is designed to place the lightest burden possible on local schools and yet provide data needed by state and national policy makers. In view of this goal, it is recommended that the system described here not be changed except for pressing data needs at the national and-or state level.

SYSTEM CHANGES: Any and all system changes must be approved by the Community and Junior College Committee on Systems. A meeting of this committee may be called by any three Community or Junior Colleges or by the State Board Staff by contacting the Chairman of the Committee.

DATA RELEASE POLICY: Any school may request any analysis of data it has supplied. The State Board MIS will provide a response to these requests under priority six. With the exception of releasing analyses of a school's data to the school, detailed data will not be released outside the Agency. Appregate analyses, however, may be released at the discretion of the State Board or its chief administrators.

PROCEDURES Data Collection procedures are graphically described in Figure 1.

1. Collection of Enrollment Data

a. Thirty days after the close of each quarter (semester), each and every local school will be responsible for submitting a computer tape (or cards) in the format presented in Appendix A.

2. Building a Composite Tape

a. The MIS Section will compile a composite tape by merging all quarter (semester) tapes (and cards) from all schools into a single file and eliminating duplicate records, i.e., students who are reported in the same program at the same school in more than one quarter (semester).

3. Building an Unduplicated Vocational Tape

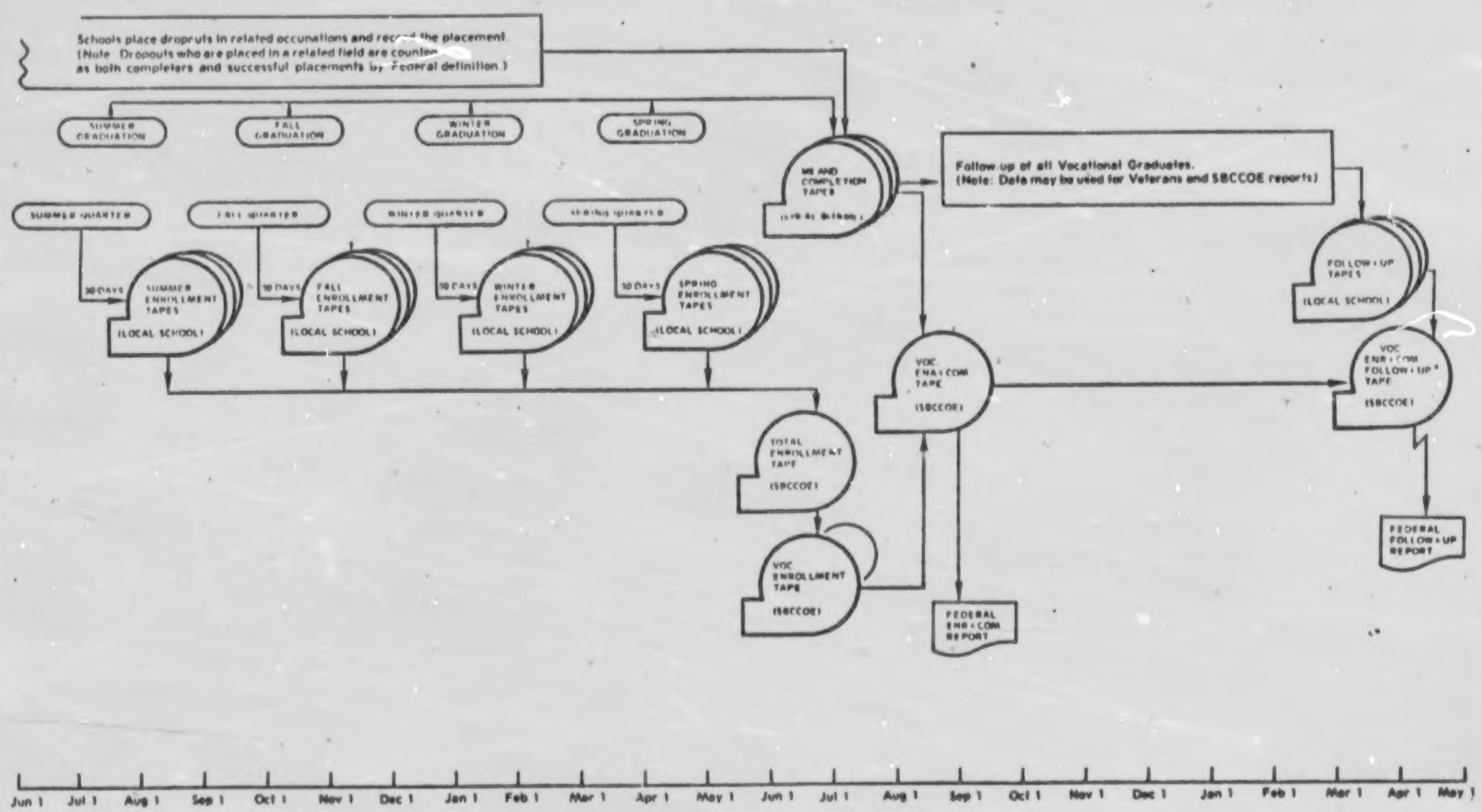
a. The MIS Section will build an unduplicated vocational tape using the composite tape from which non-vocational students will be eliminated.

4. Collection of Completion Data

a. Thirty days after the spring quarter (semester) graduation ceremonies or termination, whichever occurs last, local schools will submit a tape (or cards) which contains data on all students who have graduated from or completed an Associate degree or Certificate Program in the past year.

APPENDIX A - POSTSECONDARY SYSTEM

APPENDIX A - POSTSECONDARY SYSTEM


SUMMER GRADUATION
FALL GRADUATION
WINTER GRADUATION
SPRING GRADUATION
SUMMER QUARTER
FALL QUARTER
WINTER QUARTER
SPRING QUARTER
30 DAYS
SUMMER ENROLLMENT TAPES (LOCAL SCHOOL)
30 DAYS
FALL ENROLLMENT TAPES (LOCAL SCHOOL)
30 DAYS
WINTER ENROLLMENT TAPES (LOCAL SCHOOL)
30 DAYS
SPRING ENROLLMENT TAPES (LOCAL SCHOOL)
MS AND COMPLETION TAPES (LOCAL SCHOOL)
TOTAL ENROLLMENT TAPE (SBCCOE)
VOC ENROLLMENT TAPE (SBCCOE)
VOC ENR+COM TAPE (SBCCOE)
FEDERAL ENR+COM REPORT
FOLLOW+UP TAPES (LOCAL SCHOOL)
VOC ENR+COM FOLLOW+UP TAPE (SBCCOE)
FEDERAL FOLLOW+UP REPORT
Jun 1
Jul 1
Aug 1
Sep 1
Oct 1
Nov 1
Dec 1
Jan 1
Feb 1
Mar 1
Apr 1
May 1
Jun 1
Jul 1
Aug 1
Sep 1
Oct 1
Nov 1
Dec 1
Jan 1
Feb 1
Mar 1
Apr 1
May 1

Schools place dropouts in related occupations and record the placement.
(Note: Dropouts who are placed in a related field are counted
as both completers and successful placements by Federal definition.)

Follow up of all Vocational Graduates.
(Note: Data may be used for Veterans and SBCCOE reports)

FIGURE 1

THE COLORADO POST SECONDARY
(COMMUNITY COLLEGE AND JUNIOR COLLEGE)
DATA COLLECTION SYSTEM

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b. Academic completers may be included on this tape if the local school desires. (Academic completer is a student who completes an associate degree or certificate in a non-occupational area.)

c. At the local school's option, Marketable Skill Stopouts may be included on this tape (or cards). A Marketable Skill Stopout is defined as a student who did not complete an occupational program and who is employed in a job related to his training.

The fromat for this tape (or card) may be found in Apendix B.

5. Building a Composite Enrollment-Completion Tape

a. The MIS Section will merge the unduplicated occupational tape and the Completion Tapes (or cards) into a Composite Enrollment-Completion Tape.

b. All vocational students on the Completion Tapes (or cards) will be coded as completers or Marketable Skill Stopouts.

c. All students not on Completion Tapes (or cards) and who are enrolled in the spring quarter (semester) will be coded as continuing their training.

d. All students who are not on Completion Tapes (or cards) and who were not enrolled in the spring quarter (semester) in a given program but who are found in another occupational program in the spring quarter will be coded as transfers.

e. All other students will be coded Stopout.

f. Federal Report OE 346-3 will be prepared from this tape.

6. Collecting Follow-Up Data

a. On or before March 1 following the spring quarter or semester graduation ceremonies, local schools will prepare and submit a follow-up tape (or cards). The follow-up data may be collected between June 30 and March 1.

b. This follow-up tape (or cards) will contain a record for each occupational completer reported on the local completion tape (or cards). (Note: Marketable Skill Stopouts need not be included as they will receive an "Employed Related" follow-up code automatically.)

c. Veterans Administration follow-up data is acceptable if converted to SBCCOE codes. The time frame used to collect follow-up data can be from graduation until the March 1 deadline.

d. The format for the follow-up Tape (or cards) can be found in Appendix C.

7. Building an Enrollment-Completion Follow-Up Tape

a. The MIS Section will merge the Follow-Up Tapes (or cards) with the Composite Completion-Enrollment Tape to form an Enrollment-Completion Follow-Up Tape.

b. This tape will be used to develop the Federal OE 346-4 Report

ACCURACY AND TIMELINESS OF REPORTING: The accuracy of reporting rests with the local schools. All occupational students must have a correct school and program code. School and program codes have been developed by the Community and Junior College Committee on Codes and are found in the Appendix to this document.

Local schools are also responsible for preparing and submitting reports on time. The Chief Administrator of the school will be notified when reports are late or inaccurate. Continued problems will be referred to the appropriate State Directors.

Local records on Follow-Up may be destroyed after three years at the local school's discretion.

APPENDIX A

Enrollment Records

(NOTE: Records 1 thru 3 are completed the first time a student enrolls. Only record 3 need by submitted for following quarters (semesters) as long as the student has been continuously enrolled, i.e., has not been out of school for a quarter. The exception to this policy is that new students who first enrolled in the summer and also enroll in the following fall must have all three records submitted for each of these two enrollments.)

RECORD (Card) 1

Item Number	Column	Data Description	Contentenis	
1	1-2	Year of Reported Enrollment	1976-1977	67
			1977-1978	78
			1978-1979	89
			1979-1980	90
			1980-1981	01
			1981-1982	12
			1982-1983	23
			1983-1984	34
			1984-1985	45
			1985-1986	56
2	3	School Term	Summer	1
			Fall	2
			Winter	3
			Spring	4
			Non-Standard	0
			(Report in quarter or semester term ends)	
3	4-6	School Code	Aims College	322
			Arapahoe Com. Coll.	304
			CCD- North	301
			CCD-Red Rocks	303
			CCD- Auraria	302
			CMC- East	325
			CMC- West	324
			ElPaso Comm. Coll.	305
			Lamar Comm. College	308
			Mesa College	327
			Morgan Co. Comm. Coll.	321
			Northeastern Jr. Coll.	320

Item Number	Column	Data Description	Contents
			Otero Junior College 307
			Trinidad St. Jr. College 306
			Rangely College 326
			East Garfield 328
			West Garfield 329
			Pitkin 331
			Lake 333
			Chaffee 334
			Summit 335
			El Paso Comm. Col. -Contract 336
			Unassigned 370
			399
4	7 - 15	Student's SSN	9 Character Numeric: Hyphens are Understood
5	16	Card Number	1
6	17 - 46	Student's Name	Last name, comma,space first name, space, middle name (Doe, John Lee)
7	47 - 76	Address(Street)	30 Characters, left justified
8	77 - 80	Blank	Spaces
RECORD (Card) 2			
9	1 - 15	Base Data	Same as columns 1 - 15 in Record (Card) 1
10	16	Card Number	2
11	17 - 37	City	Student's local city, (where student is presently living) left justify.
12	38 - 39	State	Use Standard Postal State Abbreviation (Normally CO for Colorado)
13	40	Blank	Spaces
	41 - 45	Zip Code	Use Post Office Manual for ZIP Codes.

Item Number	Column	Data Description	Contents
15	46 - 47	Birthdate(Month)	01 - 12 as appropriate
16	48 - 49	Birthdate(Day)	01 - 31 as appropriate
17	50 - 51	Birthdate(Year)	Last two digits of year
18	52	Sex	Male M Female F
19	53	Marital Status	0 No response 1 Single 2 Married
20	54	Citizenship	0 No Response 1 U.S. Citizen 2 Not U.S. Citizen
21	55	Ethnic Origin	0 No Response 1 American Indian 2 African, Afro-American Negro, Black 3 Oriental, Oriental-American 4 Latin-American, Spanish-Surnamed American, Mexican- American 5 White, Caucasian 6 Other
22	56 - 61	County - High School (Student From)	Two digit county number, space, three digit school code. Report the two digit county code and the three digit high school code using the numbers listed in Appendix F. Enter a 99 for the county code of non-Colorado High School. Record 999 for the school code of non-Colorado High Schools. Enter zeros for no high school or no response.

Item Number	Column	Data Description	Contents
23	62 - 64	State High School in	State code is the alpha code used by the U.S. Postal Service, left-justified, with blank in right most position. For foreign high school, Country code, see Appendix E. Use letter z in the third column.
24	65 - 66	Year of High School Graduation	Last two digits of year of graduation (can be year of GED receipt) (00 for non-graduates)
25	67	Type Diploma	0 No Response 1 High School Diploma 2 GED 3 Non-Graduate
26	68	High School Type	0 No Response 1 Public 2 Private 3 Parochial 4 Foreign 5 No High School
27	69 - 70	Highest Elementary or Secondary Grade Completed	Indicate no. of years (00, 01,..., 12)
28	71	Previous College	Indicate no. of years (0, 1,..., 9)
29	72 - 76	Last Institution Attended	Use OSOE Institution number, 1972- 73 publication. NOTE: Use only leftmost 4 digits. Leave Blank if College not listed The following are the codes for Institutions:

Item Number	Column	Date Description	Contents
			ASC 1345 AC 7582 ACC 1346 CC 1347 CMC-W 4526 CMC-E 9003 CSM 1348 LHC 1356 MC 1358 MSC 1360 MCCC 9981 NJC 1361 OJC 1362 NWC 1359 Regis 1363 USC 1365 CWC 1351 TSJC 1368 CSU 1350 CCD-A 9542 CCD-N 7933 CCD-RR 9543 EPCC 8896 FLC 1353 LCC 1355 CU-B 1370 CU-CS 4509 CU-DC 6740 CU-MC 4508 DU 1371 UNC 1349 WSC 1372
30	77 - 78	First term of enrollment (year)	Last two digits of year first institution.
31	79 - 80	First term of enrollment (term)	1 Summer 2 Fall 3 Winter 4 Spring 0 Non-Standard NOTE: Leave column 80 Blank
RECORD (Card) 3			
32	1 - 15	Base Data	Same as columns 1 - 15 on Record 1
33	16	Card Number	3
34	17 - 22	Major	WICHE Code with 2 zeroes added at the beginning for academic subject field. OE Code for occupational subject field. (See Appendix G for OE Codes and Appendix H for WICHE Codes) Undeclared Majors use 999999.

Item Number	Column	Data Description	Contents
			Adult and Continuing Education enter 555555. Occupational majors are six digit numbers. Academic majors -- 00 plus four digits. Major field MUST be a six digit NUMBER.
35	23	Registration Type	1 First time student: a student enrolling at the institution for the first time at any institution higher education. 2 Transfer Student: a student transferring from another institution of higher education to the reporting instituion for the first time. 3 Continuing Student: a student with an unbroken sequence of enrollment at the reporting institution, not including summer sessions. 4 Readmitting Student: a student with a broken sequence of enrollment at the reporting instituion, not including sum-sessions. Also known as as RETURNING Student.
36	24-25	Registration level (Year)	Undergraduate - 1st year U1 Undergraduate - 2nd year U2 Undergraduate - 3rd year U3 Undergraduate - 4th year U4 Undergraduate - 5th year U5 Graduate - 1st G1 Graduate - through masters beyond 1st year G2 Graduate - Pre-Candidacy Doctoral G3 Graduate - Doctoral Candidate G4 Graduate - Post-Doctoral G5

Item Number	Column	Date Description	Contents
			Special - High School Student -S1 Undergraduate -S2 Graduate -S3 Adult -S4 Other -S5
37	26-28	Credit enrolled in this quarter (semester)	Total credit hours enrolled in this quarter. (Note: Assume a decimal (99V9): Use leading zeros when necessary)
38	29-31	Credit (Academic)	Portion of Item 37 for academic credit hours only.
39	32-34	Credit (Occupational)	Portion of Item 37 for occupational credit hours only.
40	35-37	Non-Credit	Portion of Item 37 for non-credit hours only. (Note: Non-credit hours are hours for which a student will not receive credit on his transcript).
41	38-40	Day Credit	Portion of Item 37 for course credit hours beginning before 5:00 p.m. only.
42	41-45	Cumulative Credit	The sum of all credit hours earned by a student up to the beginning of the current term. All credits successfully completed at another institution which are acceptable at the recording institution are counted. Courses in which the following grades have been assigned are not counted. Withdrew No-Credit Incomplete Pending In-Progress Failures Credits earned in Honors Courses, or courses taken on a pass-fail basis are normally counted.

Item Number	Column	Data Description	Contents
			CODING: Field Format: 9999V9, Decimal point understood. Example: 43.5 credit earned is coded 00435.
43	46	Blank	Spaced
44	47	Educational Plans	1. Associate Degree Academic 2. Associate Degree Occupational 3. Academic Certificate 4. Occupational certificate 5. Up-Grade academic 6. Up-Grading occupational 7. Other
45	48	Disadvantraged-Handicapped	Student considers him(her) self to be socio-economically disadvantaged or physically or emotionally handicapped. CODING: 0 No Response - to be used ONLY until proper response can be reported. 1 Socio-economically disadvantaged 2 Physically handicapped 3 Mentally or emotionally handicapped 4 Combination of above. 5 None of the above.
46	49-51	Blank	Spaces
47	52	Current Employment	1 Presently employed full time 2 Presently employed part time 3 Not employed
48	53	Relatedness (Optional)	1 Job related to training 2 Job not related to training
49	54-55	Blank	Spaces
50	56-57	Residence (county)	

Item Number	Column	Data Description	Contents
			The Colorado county in which the student's home, as indicated by permanent home address, is located. Pertains only to students classified as Colorado residents for tuition purposes. CODING: See Appendix F for county codes. If student's resident and residence county is unknow, enter zeroes. If student's home address is not in Colorado, entur 99.
51	58	Residence Status	1 Classified "In-State" (Colorado) for tuition status 2 Classified "Out-of State" (Colorado) for tuition status. 3 Classified "In District" for non-state junior colleges and assumes "in-state" for tuition status.
52	59-80	Blank	Spaces

APPENDIX B

Completion Tape or Card

(NOTE: Both tape and card will be structured the same way. Records prepared for completers or Marketable Skill Stopouts ONLY and reported 30 days after spring quarter (semester) .

Item Number	Column	Item Description	Contents
1	1-3	School Code	See Item 3 in Appendix A
2	4-9	Major Code	See Item 34 in Appendix A
3	10-18	Student SSN	See Item 4 in Appendix A
4	19-48	Student Name	See Item 6 in Appendix A
5	49	Completion Code	1 Received Degree 2 Received Certificate 3 Marketable skill (stopout employment).

APPENDIX C

Follow-up Tape

(NOTE: Both tape and card will be structured the same way. Records prepared for EVERY completer reported on the completion tape or cards on March 1, after spring quarter (semester). Marketable Skill Stopouts will automatically receive a Follow-Up Code of "1').

Item Number	Column	Description	Contents
1	1-3	School Code	See Item 3 in Appendix A
2	4-9	Program Code	See Item 34 in Appendix A
3	10-18	Student SSN	See Item 4 in Appendix A
4	19-48	Student Name	See Item 6 in Appendix A
5	49	Follow-Up Code ★	1 Employed in Job Related to training 2 Employed in Job not related to training 3 Continuing Education 4 Unemployed Seeking Employment 5 Unemployed Not Seeking Employed 6 Record in Error 7 Unknown 8 Continuing school in related field (can replace 3 if appropriate).

★ If student fits more than one category, select the most representative code.

APPENDIX D

Submission Requirements

TAPE INPUT:

- RECORD LENGTH 80
- BLOCK SIZE - 1600
- LABEL RECORDS - STANDARD LABELS
- NO. OF RECORDS ON TAPE

TAPE B.P.I. - 1600 B.P.I. (IF A 1600 B.P.I. TAPE DRIVE IS AVAILABLE. IF NOT, STATE THE B.P.I. ON THE TAPE.)

CARD OR TAPE INPUT:

MUST HAVE APPROPRIATE DATA IN COL. 1 - 15.

MUST HAVE CARD CODE IN CARD COL. 16.

MUST HAVE NUMERIC DATA IN CREDIT HOURS FIELD.

APPENDIX E

Country Codes

A

Code	Name
AC	ANTIGUA
AF	AFGHANISTAN
AG	ALGERIA
AL	ALBANIA
AN	ANDORRA
AO	ANGOLA
AQ	AMERICAN SAMOA
AR	ARGENTINA
AS	AUSTRALIA
AT	ASHMORE AND CARTIER ISLANDS
AU	AUSTRIA
AY	ANTARTICA

B

Code	Name
BA	BAHRAIN
BB	BARBADOS
BC	BOTSWANA
BD	BERMUDA
BE	BELGUIM
BF	BAHAMAS
BH	BRITISH HONDURAS
BO	BOLIVIA
BM	BURMA
BP	BRITISH SOLOMON ISLANDS
BQ	UNITED STATES MISC. CARIBBEAN ISLANDS
BR	BRAZIL
BT	BHUTAN
BU	BULGARIA
BV	BOUVET ISLAND
BX	BRUNEI
BY	BURUNDI

C

Code	Name
CA	CANADA
CB	CAMBODIA
CD	CHAD
CE	CEYLONG
CF	CONGO (BRAZZAVILLE)
CG	CONGO (KINSHASA)
CH	CHINA, COMMUNIST
CI	CHILE
CJ	CAYMAN ISLAND
CK	COCOS ISLANDS
CL	CENTRAL AND SOUTHERN LINE ISLAND
CM	CAMEROON
CN	COMORO ISLANDS
CO	COLOMBIA
CS	COSTA RICA
CT	CENTRAL AFRICAN REPUBLIC
CU	CUBA
CV	CAPE VERDE
CW	COOK ISLANDS
CY	CYPRUS
CZ	CZECHOSLOVAKIA

D

Code	Name
DA	DENMARK
DM	DAHOMEY
DO	DOMINICA
DR	DOMINICAN REPUBLIC

E

EC	EQUADOR
EG	UNITED ARAB REPUBLIC
EI	IRELAND
EK	EQUATORIAL GUINEA
EQ	CANTON AND ENDERBURY ISLANDS
ES	EL SALVADOR
ET	ETHIOPIA

F

FA	FALKLAND ISLANDS
FG	FRENCH GUIANA
FI	FINLAND
FJ	FIJI
FO	FAEROE ISLANDS
FP	FRENCH POLYNESIA
FR	FRANCE
FS	FRENCH SOUTHERN AND ANTARCTIC LANDS (excuding Terre Adelie)
FT	FRENCH TERRITORY OF AFAR AND ISSAS

G

GA	GAMBIA
GB	GABON
GC	GERMANY, SOVIET ZONE OF
GE	GERMANY, FEDERAL REPUBLIC OF
GH	GHANA
GI	GIBRALTAR
GJ	GRENADA
GL	GREENLAND
GN	GILBERT AND ELLICE ISLANDS
GP	GUADELOUPE
GQ	GUAM
GR	GREECE
GT	GUATEMALA
GV	GUINEA
GY	GUYANA
GZ	GAZA STRIP

H

HA	HAITI
HK	HONG KONG
HM	HEARD AND McDONALD ISLANDS
HO	HONDURAS
HU	HUNGARY

I

IC	ICELAND
ID	INDONESIA
IN	INDIA
IO	BRITISH INDIAN OCEAN TERR.
IQ	UNITED STATES MISC.-PACIF.
IR	IRAN
IS	ISRAEL
IT	ITALY
IU	ISRAEL-SYRIA DEMILITARIZED ZONES
IV	IVORY COAST
IW	ISRAEL-JORDAN DEMILITARIZED ZONES
IY	IRAQ-SAUDIA ARABIA NEUTRAL ZONE
IZ	IRAQ

J

JA	JAPAN
JM	JAMAICA
JN	JAN MAYEN
JO	JORDAN
JQ	JOHNSTAN ATOLL

K

KE	KENYA
KN	KOREA, NORTH REPUBLIC
KS	KOREA, SOUTH REPUBLIC
KT	CHRISTMAS ISLAND (INDIAN OCEAN)
KU	KUWAIT

L

LA	LAOS
LE	LEBANON
LI	LIBERIA
LS	LEICHTENSTEIN
LT	LESOTHO
LU	LYXEMBOURG
LY	LIBYA

M

MA	MADAGASCAR
MB	MARTINIQUE
MC	MACAO
ME	SPANISH TERRITORIES IN NORTHERN MOROCCO
MG	MONGOLIA
MH	MONTSERRAT
MI	MALAWI
ML	MALI
MN	MONACO
MO	MOROCCO
MP	MAURITIUS
MQ	MIDWAY ISLANDS
MR	MAURITANIA
MT	MALTA
MU	MUSCAT AND OMAN
MV	MALDIVES
MX	MEXICO
MY	MALAYSIA
MZ	MOZAMBIQUE

N

NA	NETHERLANDS ANTILLES
NC	NEW CALENDONEA
NE	NIUE
NF	NORFOLD ISLAND
NG	NIGER
NH	NEW HERBRIDES
NI	NIGERIA
NL	NETHERLANDS
NO	NORWAY
NP	NEPAL
NR	NAURU
NS	SURINAM
NU	NICARAGUA
NZ	NEW ZEALAND

P

PA	PARAGUAY
PC	PITCAIRN ISLAND
PE	PERU
PF	PARACEL ISLANDS
PG	SPARTLY ISLAND
PK	PAKISTAN
PL	POLAND
PN	PANAMA
PO	PORTUGAL
PP	PAPUA AND NEW GUINEA
PQ	CANAL ZONE
PT	PORTUGUESE TIMOR
PU	PORTUGUESE GUINEA

Q

QA	QATAR

R

RE	REUNION
RH	SOUTHERN RHODESIA
RO	ROMANIA
RP	PHILIPPINES
RQ	PUERTO RICO
RW	RWANDA

S

SA	SAUDI ARABIA
SB	ST. PIERRE AND MIQUELON
SC	ST. CHRISTOPHER-NEWVIS-ANGUILLA
SE	SEYCHELLES
SF	SOUTH AFRICA
SG	SENEGAL
SH	ST. HELENA
SK	SIKKIM
SL	SIERRA LEONE
SM	SAN MARINO
SN	SINGAPORE
SO	SOMALIA
SP	SPAIN
SQ	SWAN ISLANDS
SS	SPANISH SAHARA
ST	ST. LUCIA
SU	SUDAN
SV	SVALBARD
SW	SWEDEN
SY	SYRIA
SZ	SWITZERLAND

T

TC	TRUCIAL STATES
TD	TRINIDAD AND TOBAGO
TH	THAILAND
TK	TURKS AND CAICOS ISLANDS
TL	TOKELAU ISLANDS
TN	TONGA
TO	TOGO
TP	SAO TOME AND PRINCIPLLE
TQ	TRUST TERRITORY OF THE PACIFIC ISLANDS
TS	TUNISIA
TU	TURKEY
TW	CHINA, REPUBLIC OF
TZ	TANZANIA

U

UG	UGANDA
UK	UNITED KINGDOM
UR	SOVIET UNION
US	UNITED STATES
UV	UPPER VOLTA
UY	URUGUAY

V

VC	ST. VINCENT
VE	VENEZUALA
VI	BRITISH VIRGIN ISLANDS
VN	VIET-NAM. NORTH
VQ	VIRGIN ISLANDS (U.S.)
VS	VEIT-NAM. REPUBLIC
VT	VATICAN CITY

W

WA	SOUTH-WEST AFRICA
WB	WEST BERLIN
WF	WALLIS AND FUTUNA
WQ	WAKE ISLAND
WS	WESTERN SAMOA
WZ	SWZAILAND

Y

YE	YEMEN
YO	YUGOSLAVIA
YQ	RYUKYU ISLANDS,
YS	SOUTHERN YEMEN

Z

ZA	ZAMBIA

APPENDIX F

SECONDARY SCHOOL CODES

COUNTY	LOCATION	SCHOOL CODE
ADAMS COUNTY 01		
Highland	Denver	001
Mapleton	Denver	002
Lucy Auld Special	Denver	601
Thornton	Thornton	003
Northglenn	Denver	004
Adams City	Commerce City	005
Brighton	Brighton	006
Bennett	Bennett	007
Strasburg	Strasburg	008
Ranum	Denver	009
Westminster	Westminster	010
ALAMOSA COUNTY 02		
Alamosa	Alamosa	112
Sangre DeCristo	Mosca	113
ARAPAHOE COUNTY 03		
Englewood	Englewood	011
Sheridan	Fort Logan	012
Cherry Creek	Englewood	013
Arapahoe	Littleton	014
Littleton	Littleton	015
Deer Trail	Deer Trail	016
Aurora Central	Aurora	017
Aurora Hinkley	Aurora	018
Byers	Byers	019
Gateway	Aurora	241
Heritage	Littleton	233
Streer Academy	Aurora	243
Smokey Hill	Englewood	248
ARCHULETA COUNTY 04		
Pagosa Springs	Pagosa Springs	183
BACA COUNTY 05		
Walsh	Walsh	114
Pritchett	Pritchett	115
Springfield	Springfield	116
Vilas	Vilas	117
Campo	Campo	118
BENT COUNTY 06		
Las Animas	Las Animas	119
McClave	McClave	120

BOULDER COUNTY 07		
Erie	Erie	020
Longmont	Longmont	021
Lyons	Lyons	022
Boulder	Boulder	023
Broomfield	Broomfield	024
Fairview	Boulder	025
Vocational-Technical Center	Boulder	670
Centarus	Lafayette	026
Lousiville	Louisville	027
Nederland	Nederland	028
St. Vrain	Longmont	235
Niwot	Niwot	234
Lafayette	Lafayette	247
CHAFFEE COUNTY 08		
Buena Vista	Buena Vista	184
Salida	Salida	185
CHEYENNE COUNTY 09		
Kit Carson	Kit Carson	121
Cheyenne Wells	Cheyenne Wells	122
Arapahoe	Arapahoe	123
CLEAR CREEK COUNTY 10		
Idaho Springs	Idaho Springs	029
CONEJOS COUNTY 11		
Centarue	La Jara	124
Sanford	Sanford	125
Antonito	Antonito	126
COSTILLA COUNTY 12		
Centennial	San Luis	127
Sierra Grande	Blanca	128
CROWLEY COUNTY 13		
Crowley County	Ordway	129
CUSTER COUNTY 14		
Custer County Consolidated	Westcliffe	130
DELTA COUNTY 15		
Cedaredge	Cedaredge	186
Delta	Delta	187
Hotchkiss	Hotchkiss	188
Paonia	Paonia	189

DENVER COUNTY 16

Boettcher Special	Denver	602
East	Denver	030
Emily Griffith Op. School	Denver	603
Thomas Jefferson	Denver	031
John F. Kennedy	Denver	032
Abraham Lincoln	Denver	033
Manual	Denver	034
North	Denver	035
South	Denver	036
George Washington	Denver	037
West	Denver	038
Denver Metro Youth Center	Denver	604

DOLORES COUNTY 17

Dolores County	Dove Creek	190

DOUGLAS COUNTY 18

Douglas County	Castle Rock	039

EAGLE COUNTY 19

Batle Mountain	Minturn	191
Eagle Valley	Gypson	192

ELBERT COUNTY 20

Elizabeth	Elizabeth	131
Kiowa	Kiowa	132
Simla	Simla	133
Elbert	Elbert	134
Agate	Agate	135

EL PASO COUNTY 21

Calhan	Calhan	040
Harrison	Colorado Springs	141
Widefield	Security	042
Fountain	Fountain	043
Coronado	Colorado Springs	044
Mitchell	Colorado Springs	045
Palmer	Colorado Springs	046
Wasson	Colorado Springs	047
Cheyenne Mountain	Colorado Springs	048
Manitou Springs	Manitou Springs	049
Air Academy	USAF Academy	050
Ellicott	Calhan	051
Payton	Payton	052
Hanover	Colorado Springs	053
Lewis-Palmer	Monument	054
Falcon	Peyton	055
Edison	Yoder	056
Miami-Yoder	Rush	057
Doherty	Colorado Springs	250

FREMONT COUNTY 22		
Canon City	Canon City	136
Florence	Florence	137
Fremont	Cotopaxi	138
GARFIELD COUNTY 23		
Basalt	Basalt	193
Glenwood Springs	Glenwood Springs	194
Roaring Fork	Carbondale	195
Rifle	Rifle	196
Grand Valley	Grand Valley	197
GRAND COUNTY 25		
West Grand	Kremmling	198
Middle Park	Granby	199
GUNNISON COUNTY 26		
Gunnison	Gunnison	200
HUERFANO COUNTY 28		
Walsenburg	Walsenburg	139
La Veta	La Veta	140
JACKSON COUNTY 29		
North Park	Walden	201
JEFFERSON COUNTY 30		
Green Mountian	Denver	239
Columbine	Litton	238
Pomona	Arvada	240
Alameda	Denver	058
Arvada	Arvada	059
Arvada West	Arvada	060
Bear Creek	Morrison	061
Evergreen	Evergreen	062
Golden	Golden	063
Jefferson	Denver	064
Lakewood	Denver	065
Wheatridge	Wheatridge	066
Jeffco Metro Youth Center	Lakewood	605
KIOWA COUNTY 31		
Eads	Eads	141
Plainview	Sheridan Lake	142

KIT CARSON COUNTY 32

Flagler	Flagler	143
Seibert	Seibert	144
Vona	Vona	145
Stratton	Stratton	146
Bethune	Bethune	147
Burlington	Burlington	148

LAKE COUNTY 33

Lake County	Leadville	202

LA PLATA COUNTY 34

Durango	Durango	203
Bayfield	Bayfield	204
Ignacio	Ignacio	205

LARIMER COUNTY 35

Thompson Valley	Fort Collins	251
Rocky Mt.	Fort Collins	242
Fort Collins	Fort Collins	071
Poudre	Fort Collins	072
Berthoud	Berthoud	073
Loveland	Loveland	074
Estes Park	Estes Park	075

LAS ANIMAS COUNTY 36

Trinidad	Trinidad	149
Primero	Weston	150
Hoehne	Hoehne	151
Aguilar	Aguilar	152
Branson	Branson	153
Kim	Kim	154

LINCOLN COUNTY 37

Hugo	Hugo	155
Limon	Limons	156
Genoa	Genoa	157
Karval	Karval	158
Arriba	Arriba	159

LOGAN COUNTY 38

Crook	Crook	076
Iliff	Iliff	077
Sterling	Sterling	078
Fleming	Fleming	079
Merino	Merino	080
Peetz	Peetz	081
Caliche	Caliche	245

MESA COUNTY 39		
De Beque	De Beque	206
Plateau Valley	Colbran	207
Central	Grand Junction	208
Grand Junction	Grand Junction	209
Monument	Fruita	210
Ocxcupational Center	Grand Junction	606
Redlands R-5	Grand Junction	607
Palisade	Palisade	211
Gateway Undivided	Gateway	212
Riverside Special	Grand Junction	608
MINERAL COUNTY 40		
Creede	Creede	160
MOFFAT COUNTY 41		
Moffat	Craig	213
MONTEZUMA COUNTY 42		
Montezuma-Cortez	Cortez	214
Vocational-Technical Center	Cortez	672
Dolores	Dolores	215
Mancos	Mancos	216
MONTROSE COUNTY 43		
Montrose	Montrose	217
Olathe	Olathe	218
Nucla	Naturita	219
MORGAN COUNTY 44		
Brush	Brush	082
Fort Morgan	Fort Morgan	083
Weldon Valley	Wiedona	084
Wiggins	Wiggins	085
OTERO COUNTY 45		
La Junta	La Junta	161
Rocky Ford	Rocky Ford	162
Manzanola	Manzanola	163
Fowler	Fowler	164
Cheraw	Cheraw	165
Swink	Swink	166
OURAY COUNTY 46		
Ouray	Ouray	220
Ridgway	Ridgway	221
PARK COUNTY 47		
Platte Canyon	Bailey	067
South Park	Fairplay	068

PHILLIPS COUNTY 48

Haxtun	Haxtun	086
Holyoke	Holyoke	087

PITKIN COUNTY 49

Aspen	Aspen	222

PROWERS COUNTY 50

Granada	Granada	167
Lamar	Lamar	168
Holly	Holly	169
Wiley	Wiley	170

PUEBLO COUNTY 51

Centennial	Pueblo	171
Central	Pueblo	172
East	Pueblo	173
South	Pueblo	174
Pueblo County	Pueblo	175
Rye	Pueblo	176

RIO BLANCO COUNTY 52

Meeker	Meeker	223
Rangely	Rangely	224

RIO GRANDE COUNTY 53

Del Norte	Del Norte	177
Monte Vista	Monte Vista	178
Vocational-Technical Center	Monte Vista	671
Sargent	Monte Vista	179

ROUTT COUNTY 54

Hayden	Hayden	225
Steamboat Springs	Steamboat Springs	226
Soroco	Oak Creek	227

SAGUACHE COUNTY 55

Mountain Valley	Saguache	180
Moffat	Moffat	181
Center	Center	182

SAN JUAN COUNTY 56

Silverton	Silverton	228

SAN MIGUEL COUNTY 57

Telluride	Telluride	229
Norwood	Norwood	230

SEDGWICK COUNTY 58

Julesburg	Julesburg	088
Revere	Ovid	089

SUMMIT COUNTY 59

Summit County	Frisco	231

TELLER COUNTY 60

Cripple Creek	Cripple Creek	069
Woodland Park	Woodland Park	070

WASHINGTON COUNTY 61

Akron	Akron	090
Arickaree	Anton	091
Otis	Otis	092
Lone Star	Otis	093
Woodlin	Woodrow	094

WELD COUNTY 62

Valley	Gilcrest	095
Eaton	Eaton	096
Weld Central	Keenesburg	097
Windsor	Windsor	098
Roosevelt	Johnstown	099
Greeley Central	Greeley	100
Greeley West	Greeley	101
Kersey	Kersey	102
Fort Lupton	Fort Lupton	103
Highland	Ault	104
Briggsdale	Briggsdale	105
Prairie	New Raymer	106
Pawnee	Grover	107
University	Greeley	232

YUMA COUNTY 63

Liberty	Joes	108
Yuma	Yuma	109
Idalia	Idalia	110
Wray	Wray	111

APPENDIX F con't.
PRIVATE SECONDARY SCHOOL CODES

Name	County Location	County Code	School Code
Bellview Prep	Adams	01	901
Denver County Day School	Arapahoe	03	902
Kent for Girls	Arapahoe	03	903
St. Mary Academy	Arapahoe	03	904
Neuville High School	Arapahoe	03	905
Mt. St. Gertrude	Boulder	07	906
Cathedral	Denver	16	907
Holy Family	Denver	16	908
Machbeuf	Denver	16	909
Marycrest	Denver	16	910
St. Andrew Seminary	Denver	16	911
St. Francis de Sales	Denver	16	912
St. Joseph	Denver	16	913
Regis	Denver	16	914
Randell School	Denver	16	915
Denver Christian	Denver	16	916
Lutheran	Denver	16	917
Denver Mile High School	Denver	16	918
Mile Hi Academy	Denver	16	919
Mullen	Denver	16	920
Denver Children's Home	Denver	16	921
National Jewish Hospital In-Hospital School	Denver	16	922
Savio House	Denver	16	923

Name	County Location	County Code	School Code
Fountain Valley	El Paso	21	924
Benet Hill Academy	El Paso	21	925
St. Mary High School	El Paso	21	926
Color. Spgs.School for Girls	El Paso	21	927
Peoples Bible College	El Paso	21	928
The Abbey School	Fremont	22	929
St. Scholastica Academy	Fremont	22	930
Colorado Rocky Mountain	Garfield	23	931
Golden Gate Youth Camp	Gilpin	24	932
St. Mary	Huerfano	28	933
Lathrop Park Youth Camp	Huerfano	28	934
Lakewood Chjristian School	Jefferson	30	935
Colorado Academy	Jefferson	30	936
Ann Colley High	Jefferson	30	937
Forest Heights Lodge	Jefferson	30	938
Silver State Baptist Jr.-Sr. High School	Jefferson	30	939
Campion Academy	Larimer	35	940
Trinidad Catholic H.S.	Las Animas	36	941
St. Anthony	Logan	38	942
Roncalli	Pueblo	51	943
Seten	Pueblo	51	944
Adolescent Program Children's Treatment Cntr.	Pueblo	51	945
Sacred Heart Home School	Pueblo	51	946

APPENDIX G

THIS TABLE SUPERSEDES TABLE 2 OF AUGUST 1975 AND ALL PREVIOUS VE- 152 TABLES

State Board for Community Colleges and Occupational Education
207 State Services Building
Denver, Colorado 80203

U.S. OFFICE OF EDUCATION INSTRUCTIONAL PROGRAM CODES AND TITLES

GENERAL INFORMATION

ONLY the following areas have approved COOP vocational programs.

- Trade and Industrial (I.C.E.)
- Home Economics (H.E.R.O. COOP)
- Distributive Education and Multi-Occupational COOP
- Special Programs (Part G COOP)

Cooperative instruction in the following areas has not been approved under COOP codes.

- Business and Office Education
- Vocational Agriculture
- Technical Education
- Health Occupations

EXAMPLE:
COOP instruction in Business and Office areas might have been approved under 14.0700.0 (Secretarial and Related Occupations) or other Business and Office codes. Similar situations might be found in Vocational Agriculture and Technical Education.

VOCATIONAL AGRICULTURE

01.0100		Agricultural Production
	01.0101	Animal Science
	01.0102	Animal Health Technology
	01.0104	Farm Business
	01.0107	Farrier (Horseshoer)
	01.0108	Dairy
	01.0109	Beef
	01.0110	Swine
	01.0111	Horses
	01.0112	Poultry
	01.0113	Sheep
	01.0199	Agricultural Production, Other
01.0200		Agricultura Supplies-Services
	01.0201	Agricultural Chemicals
	01.0202	Feeds
	01.0203	Seeds
	01.0204	Fertilizers (Plant Food)
	01.0205	Feed Mill Operations
	01.0206	Farm Cooperative Occupations
	01.0299	Agricultural Supplies-Services, Other

VOCATIONAL AGRICULTURE (cont'd.)

01.0300	Agricultural Mechanics
01.0301	Agricultural Power and Machinery
01.0303	Soil Management
01.0304	Water Management
01.0399	Agricultural Mechanics, Other
01.0400	Agricultural Products
01.0500	Ornamental Horticulture
01.0503	Greenhouse Operation and Management
01.0504	Landscaping
01.0505	Nursery Operation and Management
01.0506	Turf Management
01.0599	Ornamental Horticulture, Other
01.0600	Agricultural Resources
01.0602	Recreation
01.0604	Wildlife
01.0608	Range
01.0699	Agricultural Resources, Other
01.0700	Forestry
01.9900	Agriculture, Other

DISTRIBUTIVE EDUCATION

NOTE: SECONDARY D.E. PROGRAMS: ALL SECONDARY D.E. PROGRAMS WHICH ARE NOT SPECIALIZED IN ONE OF THE 04. O.E. CODE AREAS (E.G., FASHION MERCHANDISING (04.0200), REAL ESTATE (04.1700), WILL USE THE O.E. CODE 04.0000 TO IDENTIFY THE PROGRAM. HOWEVER, THE O.E. CODES 04.0100 THRU 04.3100 WILL BE USED IN ITEM 23 ON THE VE-135 TO IDENTIFY EACH STUDENT'S OCCUPATIONAL OBJECTIVE.

04.0000	COOP D.E. Programs
04.0100	Advertising Services
04.0200	Apparel and Accessories (Fashion Merchandising)
04.0300	Automotive
04.0400	Finance and Credit
04.0500	Floristry
04.0600	Food Distribution
04.0700	Food Services
04.0800	General Merchandise
04.0801	Marketing Management
04.0802	Sales Technology
04.0803	Supervisory Management
04.0900	Hardware, Building Materials, Farm and Garden Supplies and Equipment
04.1000	Home Furnishings and Interior Design
04.1100	Hotel and Lodging
04.1200	Industrial Marketing

DISTRIBUTIVE EDUCATION (cont'd.)

04.1400		International Trade
04.1500		Personal Services
04.1600		Petroleum
04.1700		Real Estate
04.1800		Recreation and Tourism
04.1900		Transportation
04.2000		Retail Trade, Other
	04.2001	Auctioneering Sales
04.3100		Wholesale Trade, Other
04.9900		Distributive Education, Other

HEALTH OCCUPATIONS EDUCATION

07.0100		Dental
	07.0101	Dental Assisting
	07.0102	Dental Hygiene
	07.0103	Dental Laboratory Technician
	07.0104	Dental Aide
	07.0199	Dental, Other
07.0200		Medical Laboratory Technician
	07.0203	Medical Laboratory Assistant
	07.0204	Medical Laboratory Technician
	07.0299	Medical Laboratory Technology, Other
07.0300		Nursing
	07.0301	Nursing (Associate Degree)
	07.0302	Practical (Vocational Nursing)
	07.0303	Nursing Assistant (Aide)
	07.0304	Psychiatric Technician
	07.0305	Surgical Technician (Operating Room Technician)
	07.0307	Home Health Aide
	07.0308	Nursing, Ward Clerk (Ward Manager)
	07.0309	Nursing, Physical Assessment for Nurses
	07.0310	R.N. Refresher Nursing
	07.0311	R.N.Operating Room
	07.0399	Nursing, Continuing Education, Other
07.0400		Rehabilitation
	07.0401	Occupational Therapy Technician
	07.0402	Physical Therapy Technician
	07.0403	Activity Director (Nursing Homes)
	07.0404	Rehabilitation Aide (Athletic Aide)
	07.0499	Rehabilitation, Other
07.0500		Radiologic
	07.0501	Radiologic Technology (X-Ray)
	07.0502	Radiation Therapy
	07.0503	Nuclear Medical Technology
	07.0599	Radiologic, Other
07.0600		Ophthalmic
	07.0600	Ophthalmic Dispensing

HEALTH OCCUPATION EDUCATION (cont'd.)

- 07.0602 Orthoptics
- 07.0603 Optometrist Assistant
- 07.0699 Ophthalmic, Other

★NOTE: THIS CODE (07.0700) CANNOT BE USED IN ITEM 23 OF THE VE-135. LIST STUDENT'S SPECIFIC OCCUPATIONAL OBJECTIVE O.E. CODE IN ITEM 23.

- ★ 07.0700 Health Occupations Cluster (For Secondary Use Only)

- 07.0800 Mental Health Technology
  - 07.0801 Mental Health Technician
  - 07.0802 Mental Retardation Aide
  - 07.0803 Drug and Alcohol Abuse Technician
  - 07.0899 Mental Health Technology, Other

- 07.0900 Miscellaneous Health Occupations Education
  - 07.0901 E.K.G.
  - 07.0902 Respiratory Therapist
  - 07.0903 Respiratory Therapy Technician
  - 07.0904 Medical Assistant (Assistant in Physician's Office)
  - 07.0905 Central Supply Technician
  - 07.0906 Medical Insurance Clerk
  - 07.0907 Emergency Medical Technician (E.M.T.)
  - 07.0908 Food Services Supervisor
  - 07.0909 Mortuary Science Technician
  - 07.0910 Orthopedic Assistant
  - 07.0911 Medical Record Clerk
  - 07.0912 Medical Record Technician
  - 07.0913 Pharmaceutical Aide
  - 07.0914 First Aid
  - 07.9900 Health Occupations Education, Other

HOME ECONOMICS

★ NOTE: SECONDARY LEVEL CONSUMER AND HOMEMAKING PROGRAMS USE O.E. CODE 09.0100 ONLY.

- ★ 09.0100 Consumer and Homemaking: Preparation for Personal, Home and Family Living
  - 09.0101 Comprehensive Homemaking or Home Economics
  - 09.0102 Child Development
  - 09.0103 Clothing and Textiles
  - 09.0104 Consumer Education
  - 09.0106 Family Relations
  - 09.0107 Food and Nutrition
  - 09.0108 Home Management
  - 09.0109 Housing and Home Furnishing
  - 09.0199 Homemaking, Other
  - Occupational Preparation Programs
  - 09.0201 Care and Guidance of Children
  - 09.0202 Clothing Management, Production and Services
  - 09.0203 Food Management, Production and Services (General)
  - 09.0204 Home Furnishings Equipment and Service

HOME ECONOMICS (cont'd.)

09.0205	Institutional and Home Management and Supportive Services
09.0206	Dietetic Services
09.0207	Food Management (Front of House)
09.0208	Food Management (Back of House)
09.0209	Social Services Technician
09.0210	Special Education Aide
09.2991	Occupational Preparation, Other

**NOTE: O.E. CODE 09.2992 CANNOT BE USED IN ITEM 23 OF THE VE-135. LIST STUDENT'S SPECIFIC OCCUPATIONAL OBJECTIVE O.E. CODE IN ITEM23.

**09.2992	COOP Home Economics Related Occupations
09.2993	In-School-Skills - Multi-Occupations
09.2994	Human Services Occupations

BUSINESS AND OFFICE OCCUPATIONS

*NOTE: SECONDARY LEVEL PROGRAMS USE THESE PROGRAM CODES ONLY-POST SECONDAYR AND ADULT VOCATIONAL PROGRAMS USE ALL O.E. CODES.

*14.0100	Accounting and Computing Occupations
*14.0200	Business Data Processing Systems Occupations (General)
14.0201	Keypunch (Data Entry)
14.0202	Computer Operations
14.0203	Programming
*14.0300	General Office Clerical Occupations
14.0301	Word Processing
14.0400	Information, Communications Occupations
14.0500	Materials Support, Transporting, etc.
14.0600	Personnel Training
*14.0700	Secretarial and Related Occupations
14.0701	Legal Secretary
14.0702	Medical Secretary
14.0703	Stenographic
14.0704	Technical Sectetary
14.0705	Court Reporter
14.0800	Supervisory and Administrative Management Occupations
14.0801	Administrative Assistants
14.0802	Budget Management Analysts
14.0803	Clerical and Office Supervisors
14.0804	Data Methods and System Procedures Analyusts
14.0805	Office Managers and Chief Clerks
14.0806	Banking and Finance
14.0807	Business Management Analysts
14.0808	Para Legal Assistant
14.9900	Office Occupations, Other

TECHNICAL EDUCATION

16.1000	Engineering Technology
16.1011	Aeronautical Technology (Aerospace)

TRECHNICAL EDUCATION (cont'd.)

16.1012	Aircraft Maintenance (A and P)
16.1013	Aircraft Maintenance (Airframe)
16.1014	Aircraft Maintenance - Powerplant
16.1031	Architectural Technology
16.1051	Chemical Technology
16.1060	Natural Resources Management
16.1061	Civil Technology
16.1062	Concrete Technology
16.1063	Surveying (Photogrammetry)
16.1064	Heavy Construction Technology
16.1065	Building Inspection
16.1066	Urban PLanning
16.1067	Water-Waste-Water Technology
16.1068	Traffic Engineering
16.1069	Environmental - Protection-Control
16.1071	Electrical Technology
16.1072	Commerical Industrial Electricity
16.1081	Electronic Technology
16.1082	Communications
16.1083	Industrial Electronics
16.1084	Radio-Television (Consumer Electronics)
16.1085	Digital Electronics
16.1091	Electromechanical Technology
16.1092	Bio-Medical Technology
16.1093	Vending Machine Repair
16.1101	Environmental Technology (Heating, A-C & Refrigeration)
16.1102	Cooling
16.1103	Heating
16.1104	Ventilating (Filtering and Humidification)
16.1105	Air Conditioning, Other
16.1121	Instrumentation Technology
16.1131	Mechanical Technology
16.1132	Fluid Power
16.1133	Hydraulic Mechanics
16.1134	Quality Control
16.1135	Machining Technology
16.1141	Metallurgical Technologyu
16.1991	Engineering Related Technology, Other (Includes Blueprint Reading)
16.1992	Drafting
16.1993	Mining Technology
16.1994	Technical Illustration
16.3001	Health-Related Technology
16.4001	Office-Related Technology
16.6001	Miscellaneous Technology
16.6011	Pilot Training
16.6012	Air Traffic Control
16.6013	Aviation Occupations, Other
16.6021	Fire and Fire Safety (Science) Technology
16.6022	Fire Service Training
16.6031	Forestry Technology

TECHNICAL EDUCATION (cont'd.)

16.6050	Criminal Justice
16.6051	Police Science Technology (Law Enforcement)
16.6052	Plant Security
16.6053	Corrections (Institutions)
16.6054	Safety Administration (Includes OSHA and-or OCOSH)
16.6990	Miscellaneous Technical Education
16.6991	Audio Visual
16.6992	Graphic Communications
16.6993	Teacher Aide (Classroom Teacher Assisting)
16.6994	Radio and Television Broadcasting
16.6995	Ski Area Technology

TRADE AND INDUSTRIAL OCCUPATIONS

★ NOTE: THIS CODE (17.0000) CANNOT BE USED IN ITEM 23 OF THE VE-135. LIST STUDENT'S SPECIFIC OCCUPATIONAL OBJECTIVE O.E. CODE IN 23.

★ 17.0000	Industrial Cooperative Education (I.C.E.)
17.0200	Appliance Repiar
17.0301	Body and Fender
17.0302	Mechanics
17.0399	Automotive Services
17.0600	Business Machine Maintenance and Repair
17.0700	Commercial Art Occupations
17.0800	Commercial Fishery Occupations
17.0900	Commercial Photography
17.1001	Carpentry
17.1002	Electricity (Electrician)
17.1003	Heavy Equipment Occupations (Construction)
17.1004	Masonry
17.1005	Painting and Decorating
17.1006	Heavy Equipment Mechanic
17.1007	Plumbing
17.1009	Glazing
17.1010	Roofing
17.1011	Manufactured Housing
17.1012	Mining Occupations
17.1099	Construction and Maintenance Trades (Combination), Other (Includes Blueprint Reading)
17.1100	Custodial Services
17.1101	Industrial Maintenance Occupations
17.1200	Diesel Mechanic
17.1401	Industrial Electrician
17.1402	Lineman
17.1499	Electrical Occupations, Other
17.1600	Fabric Maintenance Services
17.1700	Foremanship, Supervision and Management Development
17.1900	Printing Press Occupations, Graphic Arts Occupations, Graphic Arts, Other
17.2101	Instruments (Other than Watches and Clocks)
17.2102	Watchmaking and Rapair
17.2302	Machine Shop

TRADE AND INDUSTRIAL OCCUPATIONS (cont'd.)

17.2303	Machine Tool Operation
17.2304	Metal Trades, Combined
17.2305	Sheet Metal
17.2306	Combination Welding
17.2307	Tool and Die Making
17.2308	Shoe Repair
17.2399	Metal Working, Other
17.2400	Metallurgy
17.2601	Barbering
17.2602	Cosmetology
17.2699	Personal Services (Equipment Operator)
17.2700	Plastics Occupations
17.2800	Bus-Truck Driving
17.2901	Baker
17.2902	Cook-Chef
17.2903	Meat Cutter
17.2904	Waiter-Waitress
17.2999	Quantity Food Occupations, Other
17.3100	Small Engine Repair, Internal Combustion
17.3200	Stationary Energy Sources Occupations
17.3300	Textile Production and Fabrication
17.3400	Leatherworking
17.3500	Upholstering
17.3601	Millwork and Cabinetmaking
17.3699	Woodworking, Other
17.3700	Gunsmithing
17.9900	Trade and Industrial Occupations, Other

SPECIAL PROGRAMS

02.0006	Career Exploratory
15.0000	Teacher Training
18.0000	Teacher Training EPDA
19.0000	Curriculum Development
20.0000	Administration
21.0000	Cluster Programs
22.0000	Mobile Unit Instruction
23.0000	C.V.A. Workshop
24.0000	Evaluation
25.0000	Credentialing
26.0000	Work Study
30.0000	Research
35.0000	Contract Programs
40.0000	Guidance
45.0000	Guidance and Placement
50.0000	Placement
60.0000	Disadvantaged
70.0000	Handicapped
[illegible].0000	COOP-G
81.0000	Multi-Occupational COOP
90.0000	Exemplary
95.0000	Engineering and Science-Related Instruction
96.0000	Long Bill Amount

APPENDIX H

WICHE Codes

TITLE	CODE
Accounting	0502
Administration, Business	0506
Administration, educational	0827
Administration, public	2102
Administration, special education	0809
Adult education	0807
Advertising	0604
Aeronautical engineering	0902
Aerospace engineering	0902
Aerospace science	1803
African languages (non-Semitic)	1116
African studies	0305
Afro-American studies	2211
Agricultural business	0112
Agricultural economics	0111
Agricultural engineering	0903
Agricultural management	0110
Agriculture, general	0101
Agriculture technologies	0116
Agronomy	0102
American Indian cultural studies	2212
American studies	0313
Analytical chemistry	1909
Anatomy	0412
Animal science	0104
Anthropology	2202
Applied design	1009
Applied mathematics	1703
Arabic	1112
Archeology	2203
Architectural Engineering	0904
Architecture	0202
Architecture, navel	0923
Art	1002
Art appreciation	1003
Art, commercial	1009
Art education	0831
Art history	1003
Asian studies, general	0301
Astronautical engineering	0902
Astronomy	1911
Astrophysics	1912
Atmospheric sciences	1913
Audiology	1220
Bacteriology	0403
Banking	0504
Biblical languages	2303
Biochemistry	0414
Bioengineering	0905
Biological and physical sciences (interdisciplinary)	4902
Biology, cellular	0417
Biology, general	0401
Biology, marine	0418
Biology, molecular	0416
Biomedical communication	1217
Biomedical engineering	0905
Biometrics	0419
Biophysics	0415
Biostatistics	0419
Black culture studies	2211
Botany, general	0402
Business administration	0506
Business, agricultural	0112
Business economics	0517
Business education	0838
Business, general	0501
Business, international	0513
Business management	0506
Business statistics	0503
Cafeteria management	1307
Catalan	1199
Cell biology	0417
Cell physiology	0417
Ceramic engineering	0916
Ceramics	1009
Chemical engineering	0906
Chemistry, general	1905
Child development	1305
Chinese	1107
Chiropractic	1221
Cinematography	1010
City planning	0206
Civil engineering	0908
Classics	1504
Clinical psychology	2003
Clinical social work	1222
Clothing	1303

TITLE	CODE
Commerce education	0838
Commerce, general	0501
Commercial art	1009
Communication media	0605
Communications, general	0601
Communications engineering	0909
Community college education	0806
Community planning	0206
Community services, general	2101
Comparative literature	1503
Computer programming	0704
Computer sciences, general	0701
Construction engineering	0908
Consumer economics	1304
Continuing education	0807
Corrections	2105
Counseling, educational	0826
Counseling, psychology for	2004
Creative writing	1507
Criminology	2209
Crop management	0102
Curriculum	0829
Cytology	0417
Dairy sciences	0105
Dance	1008
Danish	1114
Data proccessing	0703
Debate	1506
Demography	2215
Dental hygiene	1213
Dental specialties	1205
Dental technologies	1224
Dentistry, D.D.S. or D.M.D. degree	1204
Developmental psychology	2009
Dietetics	1306
Distributive education	0838
Dramatic arts	1007
Drawing	1002
Driver education	0836
Earth sciences, general	1917
East Asian studies	0302
Eastern European studies	0311
Ecology	0420
Economics	2204
Economics, agricultural	0111
Economics, business	0517
Education of the culturally disadvantaged	0813

TITLE	CODE
Education of the deaf	0812
Education of the emotionally disturbed	0816
Education, general	0801
Education of the gifted	0811
Education of mentally retareded	0810
Education of the multiple handicapped	0820
Education of the physically handicapped	0819
Education, religious	2304
Education of the visually handicapped	0814
Educational administration	0827
Educational evaluation	0825
Educational measurement	0825
Educational psychology	0822
Educational research	0824
Educational statistics	0824
Educational supervision	0828
Educational testing	0825
Electrical engineering	0909
Electronics engineering	0909
Elementary education, general	0802
Embryology	0427
Engineering, generl	0901
Engineering mechanics	0921
Engineering and other disciplines (interdisciplinary)	4904
Engineering physics	0919
Engineering technologies	0925
English as a foreign language	1508
English, general	1501
English, literature	1502
Entomology	0421
Environmental design, general	0201
Environmental engineering	0922
European studies, general	0310
Experimental psychology (animal and human)	
Family life education	0837
Family relations	1305
Farm management	0110
Fashion design	1009
Field crops	0102
Finance	0504
Fine arts, general	1001
Finnish	1199
Fish management	0107

TITLE	CODE
Floriculture	0109
Foods and nutrition	1306
Food science	0113
Food technology	0113
Foreign languages, general	1101
Forensic science	1506
Forestry	0114
Forestry technologies	0116
French	1102
Fruit production	0108
Game management	0107
General liberal arts and sciences (interdisciplinary)	4901
Genetics	0422
Geochemistry	1915
Geography	2206
Geological engineering	0911
Geology	1914
Geophysical engineering	0912
Geophysics	1916
German	1103
Government	2207
Greek, classical	1110
Guidance, education	0826
Health care administration	1202
Health education	0837
Health professions, general	1201
Hebrew	1111
Helping services	2104
Higher education, general	0805
Histology	0413
History	2205
History of education	0821
Home decoration	1302
Home economics, general	1301
Home equipment	1302
Home management	1304
Horticulture	0108
Hospital administration	1202
Hotel management	0508
Humanities and social sciences (interdisciplinary)	4903
Husbandry, animal	0104
Husbandry, dairy	0105

TITLE	CODE
Ichthyology	0499
India studies	0303
Indian (Asiatic)	1113
Industrial arts education	0839
Industrial engineering	0913
Industrial psychology	2008
Industrial relations	0516
Information sciences	0702
Information sciences, general	0701
Information systems	0702
Inorganic chemistry	1906
Institutional management	1307
Instruction	0829
Insurance	0512
Interior decoration	1009
Interior design	0203
International business	0513
public service	2106
International relations	2210
Investments	0505
Islamic studies	0306
Italian	1104
Japanese	1108
Jewelry	1009
Journalism	0602
Junior college education	0806
Junior high school education	0804
Kindergarten education	0823
Korean	1199
Labor relations	0516
Landscape architecture	0204
Latin	1109
Latin American studies	0308
Law enforcement	2105
Law, general	1401
Learning theory	0822
Liberal arts and sciences (interdisciplinary)	4901
Library science, general	1601
Limnology	0499
Linguistics	1505
Literature, comparative	1503
Literature, English	1502

TITLE	CODE
Management, business	0506
Management, engineering	0913
Marine biology	0418
Marine engineering	0923
Marketing	0509
Materials engineering	0915
Mathematics, applied	1703
Mathematics, education	0833
Mathematics, general	1701
Mathematics, statistics	1702
Mechanical engineering	0910
Medical laboratory technologies	1223
Medical record librarianship	1215
Medical specialties	1207
Medicine, M.D. degree	1206
Metallurgical engineering	0914
Metallurgy	1920
Metalsmithing	1009
Meteorology	1913
Mecical-American cultural studies	2213
Microbiology	0411
Middle Eastern studies	0309
Military science	1801
Mineral engineering	0918
Mining engineering	0918
Molecular biology	0416
Molecular physics	1903
Music (liberal arts program	1005
Music appreciation	1006
Music composition	1004
Music education	0832
Music history	1006
Music, performing	1004
Music, theory	1004
Musicology	1006
Natural resources management	0115
Naval architecture	0923
Naval science	1802
Neurosciences	0425
Norwegian	1114
Nuclear engineering	0920
Nuclear physics	1904
Nursery science	0109
Nursing (baccalaureate and higher programs)	1203
Nutrition, scientific	0424

TITLE	CODE
Occupational therapy	1208
Ocean engineering	0924
Oceanography	1919
Operations research	0507
Optometry	1209
Organic chemistry	1907
Ornamental horticulture	0109
Ornithology	0499
Osteopathic medicine, D.O. degree	1210
Pacific area studies	0314
Painting	1002
Paleontology	1918
Parasitology	0499
Park management	2103
Pathology, animal	0408
Pathology, human	0408
Pathology, plant	0404
Personnel management	0515
Petroleum engineering	0907
Petroleum refining	0906
Pharmaceutical chemistry	1910
Pharmacology, animal	0409
Pharmacology, human	0409
Pharmacology, plant	0405
Pharmacy	1211
Philology	1505
Philosophy	1509
Philosophy of education	0821
Phonetics	1505
Photography	1011
Physical chemistry	1908
Physical education	0835
Physical sciences, general	1901
Physical therapy	1212
Physics, general	1902
Physiological psychology	2010
Physiology, animal	0410
Physiology, human	0410
Physiology, plant	0406
Plant pathology	0404
Plant pharmacology	0405
Plant physiology	0406
Podiatry	1216
Political science	2207
Poultry science	0106
Pre-elementary education	0823
Programming, computer	0704

TITLE	CODE
Psychology, clinical	2003
Psychology for counseling	2004
Psychology , developmental	2009
Psychology, education	0822
Psychology, general	2001
Psychology, industrial	2008
Psychology, physiological	2010
Psychology, social	2005
Psychometrics	2006
Public address	1506
Public administration	2102
Publec health	1214
Public utilities	0510
Purchasing	0509
Radio	0603
Radiobiology	0423
Radiologic technologies	1225
Range management	0117
Reading education	0830
Real estate	0511
Recreation management	2103
Regional planning	0206
Rehabilitation services	1222
Religious education	2304
Religious music	2302
Religious studies	1510
Remedial education	0817
Restaurant management	0508
Rhetoric	1506
Russian	1106
Russian studies	0307
Safety education	0836
Sanitary engineering	0922
Sanskrit	1199
Scandinavian languages	1114
Science education	0834
Sculpture	1002
Secondary education, general	0803
Secretarial studies	0514
Securities	0505
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Semantics	1505
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Social foundations of education	0821
Social sciences, general	2201

TITLE	CODE
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Social work	2104
Sociology	2208
Soil conservation	0103
Soil management	0103
Soil science	0103
South Asian studies	0303
Southeast Asian studies	0304
Spanish	1105
Special education, general	0808
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Systems analysis	0705
Systems, information	0702
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Textiles, home economics	1303
Theological professions, general	2301
Toxicology	0426
Transportation	0510
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West European studies	0312
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APPENDIX B

SECONDARY DATA COLLECTION SYSTEM

VOCATIONAL EDUCATION BULLETIN

JULY 1976

COLORADO STATE BOARD
COMMUNITY COLLEGES
and
OCCUPATIONAL EDUCATION

MANAGEMENT INFORMATION SYSTEMS

This Bulletin Supersedes VE Bulletin - August 1975

11-VE-121-[illegible]-7/76

APPENDIX B - SECONDARY SYSTEM

NOTE: THIS BULLETIN SUPERSEDES VE BULLETIN - AUGUST, 1975

DESTROY ALL PREVIOUS BULLETINS, O.E. CODES AND INSTITUTIONAL AND SCHOOL CODES

STATE BOARD FOR COMMUNITY COLLEGES
AND OCCUPATIONAL EDUCATION
(S.B.C.C.O.E.)
207 STATE SERVICES BUILDING
DENVER, COLORADO 80203
(303) 892-3335

VOCATIONAL EDUCATION BULLETIN - JULY, 1976

MANAGEMENT INFORMATION SYSTEMS (M.I.S.)

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APPENDIX B - SECONDARY SYSTEM

PURPOSE: The collection of student, program and vocational staff information is required by Public Law 90-576. In addition, vocational information is required for: completing federal reports for financial support, the Colorado legislative budgeting process, local data reports, program evaluation, program planning, determining manpower needs and to measure the effectiveness of special programs.

FORWARD THE REQUIRED DATA TO:

J. P. (PATRICK) SHERIDAN
S.B.C.C.O.E. - M.I.S.
207 STATE SERVICES BUILDING
DENVER, CO 80203
(303) 892-3335

VE-135 (STUDENT ACCOUNTABILITY DATA TOOL)
GENERAL INFORMATION AND INSTRUCTIONS

(Please type or print all data submitted to the M.I.S.)

The VE-135 is a five-part set, color-coded, carbonless form. Information entered on the form will appear on all five parts. The WHITE COPY is used to collect student enrollment data. The GREEN COPY is used to collect student completion data. The CANARY COPY will not be used. The PINK COPY is retained as the local administration's copy. The GOLDENROD COPY is retained by the instructor selected to report the student information. It is recommended that working copies of the VE-135 or student questionnaires be used to collect the raw data at the local level. The raw data can then be forwarded to the school's administrative headquarters and typed for submission to the M.I.S.

The State Board for Community Colleges and Occupational Education (S.B.C.C.O.E.) reimburses vocational programs, not classes or courses. Enter only those students on the VE-135 who are definitely in a vocational program and who have declared a vocational objective. A vocational student must be entered on a VE-135 one time -- each fiscal year -- for each vocational program. (NOTE: The M.I.S. fiscal year begins July 1 and ends June 30.) The school providing the training is responsible for submitting the VE-135's.

No later than November 15 of each year, Items 1 through 23 are to be completed and the WHITE COPIES (Enrollment Data) mailed to the M.I.S. Attach the program's VE-114 to the VE-135 WHITE COPY ORIGINAL. Submit all of the VE-114's and the VE-135 WHITE COPIES for your school, at one time. On or before June 20, following the November 15 report, SUPPLEMENTS to the VE-135's are to be submitted on additional WHITE COPIES. (NOTE: The June 20 WHITE COPY SUPPLEMENTS are to contain only the students not reported on the November 15 report. EXAMPLE: Students enrolling in an on-going program at winter semester will be reported on the VE-135 WHITE COPY SUPPLEMENTS.) It is essential that student enrollment and student status data be recorded at the local level when a change occurs. The program's selected instructor is a key factor in maintaining the accuracy of the VE-135.

On or before June 25, following the June 20 report, Items 24 through 28 are to be completed on the GREEN COPIES (Completion Data) for every student reported on the original and supplemental WHITE COPY reports. The GREEN COPIES are then to be mailed to the M.I.S. It is recommended that the GREEN COPIES (Completion Data) for secondary and post-secondary levels be completed before the instructors leave for summer break. A workable date, at most schools, for entering data on the GREEN COPIES is May 15 of each year. Methods for recording the data on the GREEN COPIES is a local decision and will be implemented differently at each reporting school.

Secondary schools will conduct a random sample student follow-up. Post-secondary schools will follow-up all students who have completed a vocational program.

A computer print-out of all students to be followed-up will be supplied by the M.I.S. Schools are to enter placement codes on the computer print-out and return the print-out to the M.I.S. by February 15.

The V.A. Form, VE-136, telephone calls or personal contacts may be used to collect the follow-up data. (NOTE: The VE-136 replaces the DF-6.) REMEMBER: The V.A. follow-up data is acceptable for the S.B.C.C.O.E. follow-up requirements. However the appropriate placement codes must be entered on the computer print-outs.

The exception to the preceding student reporting instructions are schools reporting through the community college system. These schools will continue to report student enrollment on tape, cards or coding sheets. Schools reporting through the community college system will report according to separate instructions not in this bulletin.

VE-135 WHITE COPY -- ENROLLMENT DATA: Items 1 through 23 are to be entered on the WHITE Copy of each VE-135. The WHITE COPY is to be submitted on or before November 15. The VE-135 supplemental WHITE COPY is to be submitted to the M.I.S. on or before June 20. The June 20 WHITE COPY SUPPLEMENTS are to contain only the students not reported in the November 15 report.

INSTRUCTIONS: Student information will be reported by program. The VE-135 is constructed to report data on nine students per page. Most vocational programs will need more than one VE-135 to report all students enrolled in a program. In cases where more than one form is needed, enter the page number of pages at the top of each form. For example, a VE-135 may read PAGE 1 of 3 PAGES for a welding program at Brown High School in Smithville, Colorado. If more than one VE-135 is needed for a program, make sure all VE-135 forms are properly identified and coded (Items 1 through 10).

ITEM 1. Enter the name of the administrator responsible for the VE-135.

ITEM 2. Enter the job title of the administrator responsible for the content of the VE-135. EXAMPLE: Local Director -- Superintendent -- Principal

ITEM 3. Enter the school telephone number of the administrator responsible for the content of the VE-135.

ITEM 4. Check the level of training.

Item 5. Enter the name of the school conducting or controlling the program.

Item 6. Enter the name of the vocational program used by the local education agency.

ITEM 7. Enter the school code which can be found in Table 1 in this bulletin. NOTE: This code must be ten characters in length. Double-check the code for accuracy.

ITEM 8. Enter the program code which can be found in Table 2 in this bulletin. There are SPECIAL INSTRUCTIONS in this bulletin for certain programs -- make reference to the SPECIAL INSTRUCTIONS section.

ITEM 8. SEVENTH CHARACTER IN PROGRAM CODE: (TYPE)

All programs must enter one of the following numbers for program TYPE:
"0" Regular Programs
"1" D. E. Programs and Multi-Occupational Programs
"2" I.C.E. Programs
"3" H.E.R.O. COOP Programs
"4" Career Exploratory Programs
"5" Handicapped Programs and/or Services -- Work Experience Study Programs (W.E.S.) and Supplemental Services Programs
"6" Disadvantaged Programs
"7" COOP G Programs

ITEM 8. EIGHTH CHARACTER IN PROGRAM CODE: (SEQUENCE)

All programs must enter a letter, beginning with A, for program SEQUENCE.

For a school reporting more than one program, at the same level, using the same O.E. Code, the SEQUENCE letter is entered to separate the data. EXAMPLE: Mr. Jones, Mr. Smith and Mr. White are employed at the same secondary school. All three men are Machine Shop instructors. When Mr. Jones completes the VE-135's for students in his program, Item #8 on the VE-135's will be coded as 17.2302.0A (the A designates the first program of three programs using the same O.E. Code at the same school). When Mr. Smith completes the VE-135's for students in his program, Item #8 on the VE-135's will be coded as 17.2302.0B (the B designates the second program of three programs using the same O.E. Code at the same school). Mr. White would use program code 17.2302.0C. NOTE: Only one VE-114 is submitted for all three instructors.

The SEQUENCE letters are primarily used for programs with large student enrollment. Areas that will use the SEQUENCE letters often are Business and Office and Home Economics.

Do not hesitate to communicate with the M.I.S. if the use of the SEQUENCE letter needs clarification. The administrator responsible for completing the form must insure that no student is reported more than one time under the same program code.

Item 9. If the same students are taught by more than one instructor in a program, select an instructor who will be responsible for coordinating the reporting and enter the instructor's last name. Otherwise, each instructor reports the students for which they are responsible.

ITEM 10. Check original report if WHITE COPY is submitted in November. Check the supplemental report if WHITE COPY is submitted after November.

ITEM 11. Enter student's last name, first name and middle initial. Enter permanent address, city, state and zip code. Each space is designed for three separate lines of information to be entered. Do not enter more than nine students on one VE-135 page. Complete student addresses will facilitate the follow-up.

ITEM 12. Enter a permanent telephone number at which the student can be located after graduation.

ITEM 13. Enter the student's social security number. If student does not have a social security number, arrangements should be made to obtain one, if possible. Do not enter social security numbers after the VE-135 WHITE COPY (Enrollment Data) is submitted.

ITEM 14. Enter a "1" if the student is male or a "2" if the student is female. Do not enter letter codes.

ITEM 15. Enter a "0" if the student does not respond; "1" if the student is American Indian; "2" if the student is African, Afro-American, Negro or Black; "3" if the student is Oriental or Oriental-American; "4" if the student is Latin-American, Spanish Surnamed American, or Mexican American; "5" if the student is White or Caucasian; "6" if the student is other minority.

ITEM 16. Enter the student's grade level. Example: 09 = Ninth Grade Level. 10 = Tenth Grade Level. 11 = Eleventh Grade Level. 12 = Twelfth Grade Level. 13 = Thirteenth Grade Level. 14 = Fourteenth Grade Level. SP = Special or Ungraded.

ITEM 17. To the best of your knowledge, is this student enrolled in a single vocational program? If yes, code "1". If student is enrolled in more than one vocational program, code "2".

ITEM 18. Enter "1" if student is not a veteran and not on active military duty. Enter "2" if student is receiving V.A. educational benefits but not on active duty. Enter "3" if student is on active military duty. Enter "4 " if student is a veteran but not receiving V.A. educational benefits.

ITEM 19. Disregard. Do not complete. Omit.

ITEM 20. Enter "1" for Colorado resident. Enter "2" for out-of-state resident.

ITEM 21. The VE-135's are submitted by the school where the student is being trained. If a student's home school is conducting the training, leave blank. If a student is being trained in a school other than the student's home school, enter the student's home school code. School codes can be found in Table 1 of this bulletin.

ITEM 22. This item is to be completed for all secondary COOP students, W.E.S. students, B.C.O.E. students, and agriculture work-study students. For COOP students, enter the name of the employing firm and the telephone number. If the student is not placed on a COOP work station by November 15, leave Item 22 blank. Complete Item 22 when the GREEN COPY (Completion Data) is submitted on or before June 25. NOTE: Agriculture, B.C.O.E., D.E., Home Economics and W.E.S. Programs, refer to SPECIAL INSTRUCTIONS.

ITEM 23. If the student is in a COOP Program, enter the O.E. Occupational Objective Code which best describes the work experience. If the student is not in a COOP Program, leave blank. The O.E. Codes can be found in Table 2 of this bulletin. NOTE: Agriculture, B.C.O.E., D.E., Home Economics and W.E.S. Programs refer to SPECIAL INSTRUCTIONS.

VE-135 GREEN COPY -- COMPLETION DATA: Items 24 through 28 are to be entered on the GREEN COPY of each VE-135. The GREEN COPY is to be submitted to the M.I.S. on or before June 25.

Item 24. Enter one of the following codes.

NOTE: According to the federal definition, a student with a MARKETABLE SKILL is defined as a student who did not complete a vocational program but is employed in a job related to the training. A student who did not complete a vocational program and is employed in an unrelated job is defined as NOT having a MARKETABLE SKILL.

"1" Completed vocational training.
"2" Left vocational program with a MARKETABLE SKILL.
"3" Continuing the vocational program.
"4" Changed vocational program.
"5" Other
"6" Transferred to another school.

Item 25. To the best of your knowledge, code this column with one of the following numbers.

"1" This student is neither disadvantaged nor handicapped.
"2" This student is socially, economically, or educationally disadvantaged.
"3" This student is psychologically or physiologically handicapped.
"4" This student is both disadvantaged and handicapped.

DEFINITION-DISADVANTAGED PERSONS: Persons who have academic, social, economic, or other handicaps that prevent them from succeeding in a vocational program designed for persons without such handicaps, and, who for that reason, require specially designed educational programs or related services. The term includes persons whose needs for such programs or services result from poverty, neglect, delinquency, or cultural or linguistic isolation from this community at large, but does not include physically or mentally handicapped persons unless such persons also suffer from the handicaps described in this definition.

DEFINITION-HANDICAPPED PERSONS: Persons who are mentally retarded, hard of hearing, deaf, speech impaired, visually handicapped, seriously emotionally disturbed, crippled, or other health impaired persons, who by reason of their handicapping condition, cannot succeed in a vocational program designed for persons without such handicaps; and, who for that reason, require special educational assistance or a modified vocational program.
NOTE: Local Education Agencies must document and maintain the reasons for categorizing handicapped and disadvantaged students.

ITEM 26. Enter one of the following codes.

NOTE: The M.I.S. is only concerned with students who receive SUPPLEMENTAL SERVICES through the State Board for Community Colleges and Occupational Education. The M.I.S. is measuring the effectiveness of this agency only.

"1" This student has not received SUPPLEMENTAL SERVICES.
"2" This student has received SUPPLEMENTAL SERVICES (tutoring, special equipment and supplies, counseling, attitude development, etc.)

ITEM 27. If the student has had cooperative work experience, enter the total number of hours the student worked in the cooperative work experience.

ITEM 28. If the student has had cooperative work experience, enter the total annual salary received during this cooperative work experience.

NOTE: If the student was employed at more than one job during the school year, enter the combined hours and salary of all jobs.

NOTE: VE-135 CANARY COPY will not be submitted to the S.B.C.C.O.E.

Computer Printout - The computer printout will be used for reporting student follow-up data. The completed printout will be returned to the M.I.S. on or before February 15. If a student is employed and continuing education, enter the employment code. Codes to be entered on the printout listing include the following:

"1" Employed in job related to training (includes military)
"2" Employed in job not related to training (includes military)
"3" Continuing education
"4" Unemployed - seeking employment
"5" Unemployed - not seeking employment (this code includes the disabled, deceased, and marriage, if, in fact, the situation actually prevents working, etc.)
"6" Record in error
"7" Unknown

VE-114 (VOCATIONAL PROGRAM INFORMATION)
GENERAL INFORMATION AND INSTRUCTIONS

GENERAL INFORMATION: The VE-114 must be attached to the respective VE-135 when submitted.

If the same program is being offered at the secondary and post-secondary levels, a separate VE-114 is to be submitted for each level. One completed VE-114 per program per school, is to be submitted to the S.B.C.C.O.E. on or before November 15 of each year unless the program is implemented after November 15 in which case the due date is on or before June 25 of each year. SPECIAL PROGRAMS: If the program O.E. Code does not directly involve training students for employment, a VE-114 is not required. Examples where VE-114's are not required are supplemental services, counseling programs, job development programs and administrative programs. W.E.S. programs must be reported using the local district plan to answer the questions within the VE-114. Local Directors/Administrators are responsible for the VE-114 content validity.

DISTRIBUTION: The VE-114 is a three-part set color-coded, carbonless form. Information entered on the form will appear on all three parts. Submit the VE-114 WHITE COPY to the M.I.S. The VE-114 CANARY COPY is to be retained by the reporting L.E.A.'s administration. The VE-114 PINK COPY is retained by the reporting L.E.A.'s selected vocational instructor.

APPENDIX B - SECONDARY SYSTEM

INSTRUCTIONS:

ITEM 1. Enter the name of the administrator responsible for the content of the VE-114.

ITEM 2. Enter the specific job title of the administrator responsible for the content of the VE-114.

ITEM 3. Enter the school telephone number of the administrator responsible for the content of the VE-114.

ITEM 4. Check or "X" the level of training.

ITEM 5. Enter the name of the school conducting or controlling the program.

ITEM 6. Enter the name of the vocational program used by the Local Education Agency.

ITEM 7. Enter the school code which can be found in Table 1 in this bulletin. Double-check the code for accuracy.

ITEM 8. Enter the program code which can be found in Table 2 in this bulletin. There are SPECIAL INSTRUCTIONS in this bulletin for certain programs -- make reference to SPECIAL INSTRUCTIONS section.

ITEM 8. SEVENTH CHARACTER IN PROGRAM CODE: (TYPE)
All programs must enter one of the following numbers for program TYPE.
"0" Regular Programs
"1" D.E. Programs and Multi-Occupational Programs
"2" I.C.E. Programs
"3" H.E.R.O. COOP Programs
"4" Career Exploratory Programs
"5" Handicapped Programs and/or Services -- Work Experience Study Programs (W.E.S.) and Supplemental Services Programs
"6" Disadvantaged Programs
"7" COOP G Programs

ITEM 8. EIGHTH CHARACTER IN PROGRAM CODE: (SEQUENCE)

All programs must enter a letter, beginning with A, for program SEQUENCE.

For a school reporting more than one program, at the same level, using the same O.E. Code, the SEQUENCE letter is entered to separate the data. EXAMPLE: Mr. Jones, Mr. Smith and Mr. White are employed at the same secondary school. All three men are Machine Shop instructors. When Mr. Jones completes the VE-135's for students in his program, Item #8 on the VE-135's will be coded as 17.2302.0A (the A designates the first program of three programs using the same O.E. Code at the same school). When Mr. Smith completes the VE-135's for students in his program, Item #8 on the VE-135's will be coded as 17.2302.0B (the B designates the second program of three programs using the same O.E. Code at the same school). Mr. White would use program code 17.2302.0C. NOTE: Only one VE-114 is submitted for all three instructors.

The SEQUENCE letters are primarily used for programs with large student enrollment. Areas that will use the SEQUENCE letters often are Business and Office and Home Economics.

Do not hesitate to communicate with the M.I.S. if the use of the SEQUENCE letter needs clarification. The administrator responsible for completing the form must insure that no student is reported more than one time under the same program code.

ITEM 9. Enter the number of times the program advisory committee met last year. Reporting schools are to document the advisory committee meetings with minutes. Program advisory committee minutes may be retained at the local level.

ITEM 10. Enter the number of students who could receive job-entry level skills. If the program was designed to accommodate twenty students, enter the number twenty although there are twenty-five students in the program. The answer can be determined by the amount of space, training stations and the contact between instructor and student.

ITEM 11. The answer should coincide with the program VE-120. Supportive classroom and/or laboratory clock hours are to be included.

ITEM 12. Enter the number of weeks required to complete the total program.

ITEM 13. Enter the month and year recorded on the latest approved VE-120. Reporting schools must have a VE-120 and the S.B.C.C.O.E. must have a copy.

ITEM 14. If the program has incorporated major change(s) check "YES." If the program has not incorporated major change(s), check "NO." EXAMPLE: A major change would be the purchase of new automotive diagnostic equipment or the addition of automatic welding to an electric welding program. NOTE: VE-120 Supplements are to be submitted to the Regional Planner when the change occurs.

VE-117 (ADULT VOCATIONAL AND APPRENTICESHIP PROGRAM DATA)
GENERAL INFORMATION AND INSTRUCTIONS

PURPOSE: Adult vocational and apprenticeship data are required by Public Law 90-576. The data content is used to complete federal reports for vocational dollars. In addition, the data collected are used for Colorado legislation, program cost analysis, program evaluation, program planning and program visitations. The VE-117 and the VE-115 (Certification of Local Plan) verify the program activities at the Local Educational Agencies (L.E.A.) for financial reimbursement from the State Board for Community Colleges and Occupational Education (S.B.C.C.O.E.). The VE-117 is a student accountability tool as well as a financial reimbursement document.

GENERAL INFORMATION: The VE-117 is a three-part set, color-coded, carbonless form. Information entered on the form will appear on all three parts. One completed VE-117 per program is to be submitted to the S.B.C.C.O.E. within ten calendar days after the program starts. L.E.A.'s will receive a VE-117 quarterly printout of the instructors and programs that have been approved by the S.B.C.C.O.E. for financial reimbursement. The reimbursement will vary from fiscal year to fiscal year.

DISTRIBUTION: Submit the VE-117 WHITE COPY and CANARY COPY to the S.B.C.C.O.E. LEA's are to retain the VE-117 PINK COPY to compare against the VE-117 quarterly print-out.

INSTRUCTIONS:

ITEM 1. Enter the name of the administrator responsible for the content of the VE-117.

ITEM 2. Enter the specific job title of the administrator responsible for the content of the VE-117.

ITEM 3 Enter the school telephone number of the administrator responsible for the content of the VE-117.

ITEM 4. Check or "X" the level of training.

ITEM 5. Enter the name of the school conducting or controlling the program.

ITEM 6. Enter the name of the vocational program used by the L.E.A.

ITEM 7. Enter the school code which can be found in Table 1 in this bulletin. Double-check the code for accuracy.

ITEM 8. Enter the program code which can be found in Table 2 in this bulletin.

ITEM 8. SEVENTH CHARACTER IN PROGRAM CODE: (TYPE)
All programs must enter one of the following numbers for program TYPE.

"8" Adult Vocational
"9" Apprenticeship

ITEM 8. EIGHTH CHARACTER IN PROGRAM CODE: (SEQUENCE)

All programs must enter a letter. beginning with A, for program SEQUENCE.

EXAMPLE: For a school reporting more than one program at the same level, at different times, using the same O.E. Code, the SEQUENCE letter is entered to separate the data. Mr. Jones, Mr. Smith and Mr. White are employed at the same post-secondary school. All three men are Machine Shop instructors. When Mr. Jones completes the VE-117 for students in his program, Item #8 on the VE-117 will be coded as 17.2302.0A (the A designates the first program of three programs using the same O.E. Code at the same school). When Mr. Smith completes the VE-117 for students in his program, Item #8 on the VE-117 will be coded as 17.2302.0B (the B designates the second program of three programs using the same O.E. Code at the same school). Mr. White would use program code 17.2302.0C, etc.

ITEM 9. L.E.A.'s are required to enter the location where the program is being conducted. This information is needed for the S.B.C.C.O.E. supervisory personnel to plan visits.

ITEM 10. Briefly state the purpose of this program.
EXAMPLE: Instructing electrical linemen in new safety procedures.

ITEM 11. Enter the starting date of the program.

ITEM 12. To the best of your knowledge, enter the ending date of the program.

ITEM 13. To the best of your knowledge, enter the number of hours required to complete the program.

ITEM 14. Enter the number of males and the number of females.

ITEM 15. To the best of your knowledge, enter the program's racial distribution.

ITEM 16. Enter the appropriate numbers. Refer to VE-135 Instructions, Item #25 for the definitions of disadvantaged and handicapped persons.

ITEM 17. Same as Item 16.

ITEM 18. Under "Area of Credential", enter one of the following: Agriculture, Distributive Education (D.E.), Health, Business and Office Education (B.O.E.), Technical, Trade and Industrial (T.&I.), Guidance, Job Development Specialist (J.D.S), COOP G, Multi-Occupational, Handicapped, Disadvantaged, Administrative, or if other -- specify.

ITEM 18. Under "Credential Expiration Date", enter the month and year the vocational credential expires. Enter PENDING for those instructors who have not received credential approval from U.N.C. or C.S.U. The M.I.S. will communicate with the credentialing officers at U.N.C. and C.S.U. to determine the credential status.

ITEM 18. Under the "Estimated Cost for the Salary", enter the estimated salary cost for each instructor and total. This entry should reflect the actual cost as best determined at the L.E.A.

ITEM 18. Under the "Estimated Cost for Travel", enter the estimated travel cost for each instructor and total. This entry should reflect the actual travel cost as best determined at the L.E.A.

APPENDIX B - SECONDARY SYSTEM

VE-130 (VOCATIONAL STAFF INFORMATION) COMPUTER PRINTOUTS
GENERAL INFORMATION AND INSTRUCTIONS

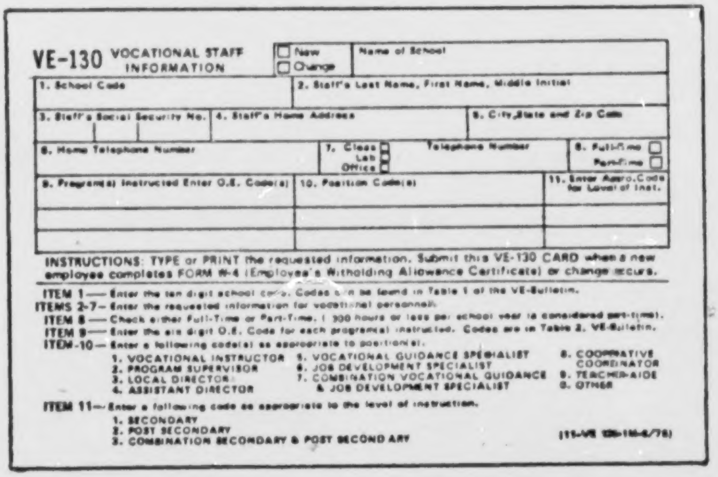
PURPOSE: Vocational staff information is required by Public Law 90-576. In addition, vocational staff information is required for completing federal reports, to alert vocational personnel regarding workshops, available grants, new and changing rules and regulations, new and changing policies, to arrange meetings, to acquire recommendations from field personnel, and to inform vocational personnel concerning legislative activity. The VE-130 is used exclusively by the S.B.C.C.O.E. and is maintained in accordance with the Family Educational Rights and Privacy Act of 1974.

GENERAL INFORMATION: Local Education Agencies (L.E.A.'s) will receive semi-annual computer printouts (VE-130) of the secondary and post-secondary personnel employed at their schools. L.E.A.'s will receive the printouts on August 10 and February 1. If there are no changes in the vocational staff at your school, write in NO CHANGE on the first page of the computer printout and return to the M.I.S. immediately. The M.I.S. is requesting that L.E.A.'s make the following changes on the printouts and submit one corrected copy as outlined in the memorandum accompanying the computer printouts:

1. Enter all information on the printout for vocational personnel not listed.
2. Retain one printout for local use and mail one corrected printout to the M.I.S.
3. Correct existing information for address changes, telephone changes and level of instruction (Sec, P-Sec or Sec/P-Sec).
4. If there is a change in either full-time or part-time (300 hours or less per year is considered part-time) enter the corrections.
5. If not on the printout, enter the correct telephone number and extension where the vocational personnel can be contacted during work.
6. If not on the printout, enter the year that the vocational credential expires. If the printout indicates that an employee is not presently credentialed, it may be for one of the following reasons:
    a. the social security number is incorrect (please check),
    b. the credential has only recently been applied for (within the last month), or
    c. the employee does not have a vocational credential.
7. Line-out personnel that have left your employ.

VE-130 (VOCATIONAL STAFF INFORMATION) 4" X 6" CARD

The VE-130 Card is designed in order that L.E.A.'s can report vocational personnel changes and additions to the M.I.S. as they occur. By using the VE-130 Card, L.E.A.'s will be required to enter fewer changes on the VE-130 Computer Printout. Below is a duplication of the VE-130 Card. If your organization needs additional VE-130 Cards, notify the M.I.S. accordingly. The VE-130 Card is to be used for full time and part time secondary and post-secondary personnel. The VE-130 Card should also be submitted when an employee terminates. When an employee terminates, enter the name of school, employee's name and write "Terminated" in Item #9.



VE-130 VOCATIONAL STAFF INFORMATION

☐ New
☐ Change
Name of School

1. School Code
2. Staff's Last Name, First Name, Middle Initial
3. Staff's Social Security No.
4. Staff's Home Address
5. City,State and Zip Code
6. Home Telephone Number
7. Class ☐ Lab ☐ Office ☐ Telephone Number
8. Full-Time ☐ Part-Time ☐
9. Program(s) Instructed Enter O.E. Code(s)
10. Position Code(s)
11. Enter Appro.Code for Level of Inst.

INSTRUCTIONS: TYPE or PRINT the requested information. Submit this VE-130 CARD when a new employee completes FORM W-4 (Employee's Witholding Allowance Certificate) or change occurs.

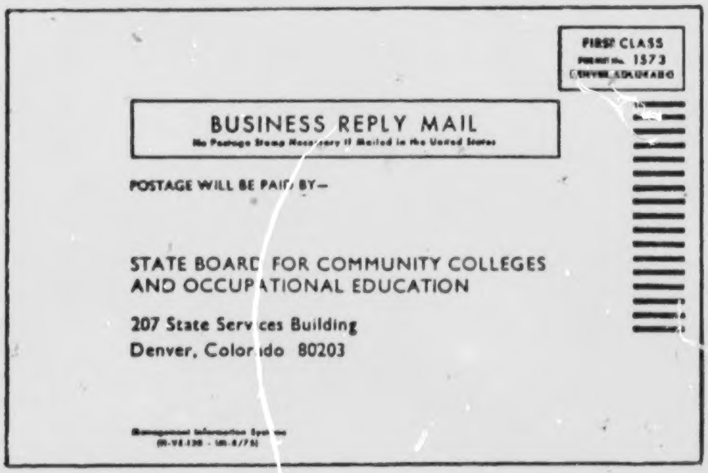
ITEM 1 — Enter the ten digit school code. Codes can be found in Table 1 of the VE-Bulletin.
ITEMS 2-7 — Enter the requested information for vocational personnel.
ITEM 8 — Check either Full-Time or Part-Time. (300 hours or less per school year is considered part-time).
ITEM 9 — Enter the six digit O.E. Code for each program(s) instructed. Codes are in Table 2, VE-Bulletin.
ITEM-10 — Enter a following code(s) as appropriate to position(s).

1. VOCATIONAL INSTRUCTOR
2. PROGRAM SUPERVISOR
3. LOCAL DIRECTOR
4. ASSISTANT DIRECTOR
5. VOCATIONAL GUIDANCE SPECIALIST
6. JOB DEVELOPMENT SPECIALIST
7. COMBINATION VOCATIONAL GUIDANCE & JOB DEVELOPMENT SPECIALIST
8. COOPERATIVE COORDINATOR
9. TEACHER-AIDE
0. OTHER

ITEM 11 — Enter a following code as appropriate to the level of instruction.

1. SECONDARY
2. POST SECONDARY
3. COMBINATION SECONDARY & POST SECONDARY

(15-VE 130-1M-6/78)



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SPECIAL INSTRUCTIONS FOR VOCATIONAL AGRICULTURE PROGRAMS

State Board for Community Colleges and Occupational Education (S.B.C.C.O.E.) reimburses vocational programs, not classes or courses. Enter only those students on the VE-135 that are definitely in a vocational program and who have declared a vocational objective.

NOTE: Vocational Agriculture Programs must enter the appropriate codes and information for all students in Items #22 and #23.

Item #22 - This section is to be completed for all secondary Agriculture students. There are five ways through which the supervised occupational experience program can be accomplished and one or more of the following letter codes and/or information must be entered.

1. Supervised farming program (for students carrying one or more production enterprises)
   Enter "P" on Item 22.

2. Cooperative occupational experience program (for students who have a non-production Agricultural occupation)
   Enter the name of the employing firm, the telephone number and the letter "C".

   If this student is not placed by November 15, leave Item #22 blank. Complete Item #22 when the GREEN COPY is submitted on or before June 25.

3. Laboratory situation (for students in production or non-production agriculture occupation but receives laboratory experience in facilities provided by the school)
   Enter "L" in column #22.

4. Farm placement (students utilizing farm placement for their occupational experience program should have a production agriculture objective)
   Enter "F" in column #22.

5. Improvement projects and/or supplementary farm practices only (For students whose supervised occupational experience program is improvement projects and/or supplementary practices)
   Enter "S" in column #22.

Item #23 - If the student is in a COOP program, enter the O.E. Occupational Objective code which best describes the work experience. The O.E. Occupational Codes can be found in Table 2 of this bulletin.

EXPLANATION OF ITEMS #22 AND #23 OF THE VE-135

Tom W. Jones
Tom has a market swine enterprise on the school land laboratory. The facilities are provided for by the local FFA Chapter. Thus report this student by the letter "L".

Billy A. Smith
Billy is a farm student with production enterprises of his own. Thus is reported with a "P".

Mary J. Kissler
Mary is a town student in a cooperative occupational experience program in non-production agriculture. She works at the counter at Ranchway Feeds selling livestock feed and supplies. Thus she is reported by listing the employing firm, phone number and the letter "C". Item #23 is recorded with the O.E. Code number 01.0299 as she is in Agricultural Supplies/Services.

Rose M. Reeves
Rose has a dual experience program. She has a production enterprise of dairy-producing cows. She also is placed on a neighbor's dairy farm for additional skills in dairy management as her program is limited. Because she carries two different types of occupational experience programs, you record a "P" for her production enterprise and an "F" for Farm Placement in a production agriculture.

Darrell A. Leonard
Darrell is a town student with a production enterprise on the school land laboratory of market swine to receive additional training. Darrel is employed by Leanway Swine Co. Thus, an "L" is recorded on Item #22 as well as the employing firm and phone number. Item #23 is recorded with O.E. Code number 01.0101 representing Agriculture Production in Animal Science.

John B. Lapp
John is a town student and has not developed plans for a production enterprise, farm placement or laboratory experience because of financial problems. He has developed improvement projects and supplementary skills. He plans and will carry this out during his own time at the school land laboratory and at home.
Enter "S" in Item #22.

SPECIAL INSTRUCTIONS FOR DISTRIBUTIVE EDUCATION PROGRAMS

SECONDARY PROGRAMS -- VE-135, Item #8 (Program Code, TYPE, SEQUENCE). Refer to the VE-135 Completion Instruction, Item #8 for clarification.

SECONDARY D.E. PROGRAMS are to use the O.E. Code that appears on the VE-120 (Guide for Occupational Program) in Item #8 on the VE-135 and VE-114. Submit the VE-114 with the VE-135 WHITE COPY (Enrollment Data)

EXAMPLE: A general D.E. Program is coded 04.0000.1A.

EXAMPLE: A specialized D.E. Program (Apparel and Accessories) is coded 04.0200.1A.

VE-135, Items #22 and #23. NOTE: Entries in Items #22 and #23 are to be made only for secondary D.E. students who will receive credit for cooperative on-the-job training.

VE-135, Item #22 (EMPLOYING FIRM AND TELEPHONE NUMBER) -- The information for secondary D.E. students who are employed prior to November 15 must be entered in Item #22 in the VE-135 WHITE COPY (Enrollment Data). For secondary D.E. students who become employed after November 15, Item #22 is to be left blank on the VE-135 WHITE COPY (Enrollment Data). Secondary D.E. students who become employed after November 15, Item #22 will be completed before the VE-135 GREEN COPY (Completion Data) is submitted on or before June 25.

VE-135, Item #23 (OCCUPATIONAL OBJECTIVE O.E. CODE) -- On or before November 15 all secondary D.E. students are to be assigned an O.E. Code. The applicable O.E. Codes can be found in Table 2 of this bulletin.

EXAMPLE: Mary L. White is in D.E. Program 04.0000.1A and has an occupational objective in hotel and lodging. The O.E. Code in Item #23 would be -- 04.1100 (Hotel and Lodging).

POST-SECONDARY PROGRAMS -- VE-135, Item #8 (Program code, TYPE, SEQUENCE)

POST-SECONDARY D.E. PROGRAMS are to use the O.E. Code that appears on the VE-120 (Guide for Occupational Program). NOTE: Entries in Items #22 and #23 are to be made only for post-secondary students who will receive credit for cooperative on-the-job training.

Post-secondary D.E. Programs are to report as described above for secondary programs.

APPENDIX B - SECONDARY SYSTEM

SPECIAL INSTRUCTIONS FOR HOME ECONOMICS PROGRAMS

State Board for Community Colleges and Occupational Education (S.B.C.C.O.E.) reimburses vocational programs, not classes or courses. Enter only those students on the VE-135 that are definitely in a vocational program and who have declared a vocational objective. Secondary level Home Economics Programs will use only the following nine O.E. Codes:

09.0100	Consumer and Homemaking
09.0201	Care and Guidance of Children
09.0202	Clothing Management, Production and Services
09.0203	Food Management, Production and Services
09.0204	Home Furnishings, Equipment and Services
09.0205	Institutional and Home Management and Supportive Services
09.0206	Dietetic Aide
09.2991	Occupational Preparation, Other
09.2992.3	COOP H.E.R.O.

NOTE: Post-secondary level Home Economics Programs can use all O.E. Codes.

VE-135, Item #22 and #23 - NOTE: Entries in Items #22 and #23 are to be made only for secondary COOP H.E.R.O. students who will receive credit for cooperative on-the-job training. Applicable O.E. Codes can be found in Table 2 of this bulletin.

NOTE FOR CONSUMER AND HOMEMAKING 09.0100 PROGRAMS ONLY

VE-135, Item #27. On or before June 25 of each year the GREEN COPY (Completion Data) is submitted to the S.B.C.C.O.E. During the school year, students enrolled in Consumer and Homemaking - 09.0100 receive instruction in one or more programs in Consumer and Homemaking. Item #27 is to be coded as follows for those students who have received training in the programs below:

A = 09.0101 Comprehensive Homemaking
B = 09.0102 Child Development
C = 09.0103 Clothing and Textiles
D = 09.0104 Consumer Education
E = 09.0106 Family Relations
F = 09.0107 Food and Nutrition
G = 09.0108 Home Management
H = 09.0109 Housing & Home Furnishing

EXAMPLE: Mary brown is enrolled in Consumer and Homemaking 09.0100. During the school year, Mary received training in Child Development, Clothing and Textiles and Family Relations. Before the VE-135 GREEN COPY (Completion Data) is submitted, Codes B - C - E will be entered in Item #27.

PROGRAM SEQUENCE -- Schools employing several Home Economics instructors can distinguish individual programs within the school's major program as follows:

EXAMPLE: Ms. Jones, Ms. Smith and Ms. White instruct 240 students in Consumer and Homemaking, 09.0100.0. When Ms. Jones completes the VE-135's for the students under her instruction, Item #8 on the VE-135's will be coded 09.0100.0A (the A designates the first program of several programs using the same O.E. Code at the same school). When Ms. Smith completes the VE-135's for the students under her instruction, Item #8 on the VE-135's will be coded 09.0100.0B (the B designates the second program of several programs using the same O.E. Code at the same school). Ms. White would use O.E. Code 09.0100.0C, the third program. The SEQUENCE letter is primarily used for programs and schools with large student enrollment. The use of the SEQUENCE letter is optional for programs with student enrollment of sixty students or less. However, the SEQUENCE letter will be helpful during follow-up. Students will not be entered on more than one Home Economics 09.0100 program VE-135 in any given year.

If a student is enrolled in a Home Economics Program and also enrolled in another vocational program, other than Home Economics, the code "2" must be entered in Items #17 (DUPLICATE) on the VE-135.

NINTH GRADE HOME ECONOMICS STUDENTS ONLY - VE 135 ENTRIES

The following entries on the VE-135 are required but not limited to:

1. Complete Items #1 through #10 as outlined in the instructions (EVALUATION SERIES BULLETIN)
2. Item #11 - Enter the student's name only. Omit address, city, state and zip code.
3. Items #12 and #13 - Omit
4. Items #14, #15 and #16 - Complete
5. Items #17 through #23 - Omit
6. Items #24, #25 and #26 - Complete
7. Items #28 and #29 - Omit

Submit the VE-135 Enrollment Data, the VE-135 Supplement Enrollment and the VE-135 Completion Data as called for in the instructions and as outlined at the bottom of each VE-135.

Tenth, eleventh and twelfth grade Home Economics students will be reported by completing all applicable information.

SPECIAL INSTRUCTIONS FOR BUSINESS AND OFFICE PROGRAMS

State Board for Community Colleges and Occupational Education (S.B.C.C.O.E.) reimburses vocational programs, not classes or courses. Enter only those students on the VE-135 that are definitely in a vocational program and who have declared a vocational objective. Secondary level Business and Office Programs will use the following four O.E. Codes :

14.0100	Accounting and Computing Occupations
14.0200	Business Data Processing Systems Occupations
14.0300	General Office Clerical Occupations
14.0700	Secretarial and Related Occupations

VE-135, Items #22 and #23. NOTE: Entries in Items #22 and #23 are to be made only for secondary B.C.O.E. students who will receive credit for cooperative on-the-job training. Applicable O.E. Codes can be found in Table 2 of this bulletin.

Post-secondary level Business and Office Programs can use all Business and Office O.E. Codes.

Reporting schools must use the O.E. Code that appears on the program VE-120. Students must be entered one time in the most appropriate program. Do not enter a Business and Office student in more than one Business and Office Program. If a student is enrolled in a Business and Office Program and also enrolled in another vocational program, other than Business and Office Education, the code "2" must be entered in Item #17 (DUPLICATE) on the VE-135.

If the same program is being offered at the secondary and post-secondary levels, a separate VE-114 (Vocational Program Information) is submitted for each level.

PROGRAM SEQUENCE: Schools employing several instructors for a specific Business and Office Program, e.g., General Office Clerical Occupations - 14.0300.0, can distinguish individual programs within the school's major program as follows:

EXAMPLE: Ms. Jones, Ms. Smith and Ms. White instruct 360 students in General Office Clerical Occupations, 14.0300.0. When Ms. Jones completes the VE-135's for the students under her instruction, Item #8 on the VE-135's will be coded as 14.0300.0A (the A designates the first program of several programs using the same O.E. Code at the same school). When Ms. Smith completes the VE-135's for the students under her instruction, Item #8 on the VE-135's will be 14.0300.0B (the B designates the second program of several programs using the same O.E. Code at the same school). Ms. White would use 14.0300.0C, the third program. The SEQUENCE letter is primarily used for programs and schools with large student enrollment. The use of the SEQUENCE letter is optional for programs with student enrollment of sixty students or less. However, the SEQUENCE letter will be helpful during follow-up.

SPECIAL INSTRUCTIONS FOR WORK EXPERIENCE STUDY (W.E.S.) PROGRAMS:

VE-135's must be submitted on all WORK EXPERIENCE STUDY programs. A VE-120 is not required for WORK EXPERIENCE STUDY programs. A VE-114 is to be submitted for a WORK EXPERIENCE STUDY program using the local district plan to answer the questions.

VE-135, Items #22 and #23. NOTE: Entries in Item #22 and #23 are to be made only for secondary W.E.S. students who will receive credit for cooperative on-the-job training. Applicable O.E. Codes can be found in Table 2 of this Bulletin.

WORK EXPERIENCE STUDY programs operate under a District Plan and contracts, with the S.B.C.C.O.E., the Department of Education, and the Department of Vocational Rehabilitation.

SPECIAL INSTRUCTIONS FOR SUPPLEMENTAL SERVICES (S.S.) PROGRAMS:

For schools using the VE-135, the SUPPLEMENTAL SERVICES program will be reported in Items #25 and #26 according to the VE-135 instructions. For SUPPLEMENTAL SERVICES programs, Items #25 and #26 are to be completed on the VE-135 GREEN COPY (Completion Data) and submitted to the M.I.S. on or before June 25. VE-135, Items #27 and #28 will not be completed.

For schools using computer cards or computer tapes, the SUPPLEMENTAL SERVICES programs are to be reported by student on the annual Student Profile Sheets. Student Profile Sheets are to be submitted to the Supervisor for the Special Programs -- S.B.C.C.O.E. as requested.

The M.I.S. is interested in only those students receiving SUPPLEMENTAL SERVICES through the S.B.C.C.O.E. SUPPLEMENTAL SERVICES being provided from agencies other than the S.B.C.C.O.E. do not concern the M.I.S. The M.I.S. is measuring the effectiveness of this agency only.

A VE-120 (Proposal for Vocational Program) is not required for a SUPPLEMENTAL SERVICES program. SUPPLEMENTAL SERVICES programs operate under a VE-116 (Disadvantaged and Handicapped Program) with the S.B.C.C.O.E. A VE-114 (Vocational Program Information) is not required with a SUPPLEMENTAL SERVICES program.

SPECIAL INSTRUCTIONS FOR STUDENTS EXPECTED TO COMPLETE A VOCATIONAL PROGRAM WITHIN SIXTY DAYS AFTER THE END OF THE FISCAL YEAR:

For many schools, vocational programs are completed in July and August of each year. Students that are expected to complete a vocational program within sixty days after the fiscal year ends, the appropriate completion codes are to be entered on the VE-135's GREEN COPY (Completion Data) and submitted to the M.I.S. on or before June 25. The follow-up for students expected to complete a program in July or August will be completed in the following February of each year.

The above procedure is necessary in order that an eight-month student follow-up is possible in lieu of a twenty-month student follow-up.

NOTE: The M.I.S. fiscal year begins July 1 and ends June 30.

APPENDIX B - SECONDARY SYSTEM

SCHOOL AND INSTITUTIONAL CODE NUMBERS
(ALPHABETIZED BY COUNTY BY SCHOOL)

SECONDARY SCHOOLS

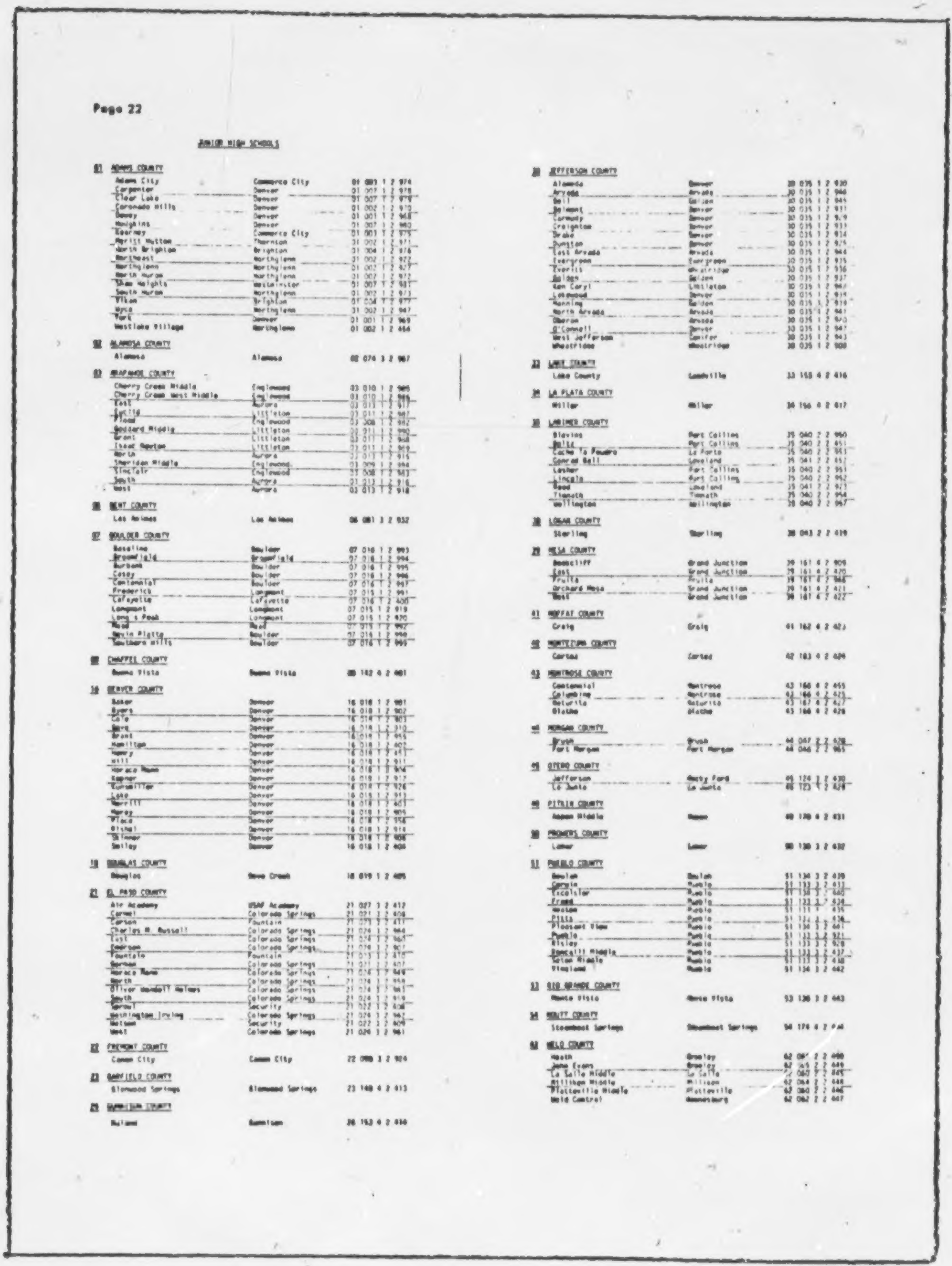
01 ADAMS COUNTY		
Adams City	Commerce City	01 003 1 3 005
Bennett	Bennett	01 005 1 4 007
Brighton	Brighton	01 004 1 3 006
Career Enrichment Park	Westminster	01 007 1 3 249
Highland	Denver	01 001 1 5 001
Mapleton	Denver	01 001 1 5 002
Northglenn	Northglenn	01 002 1 3 004
Ranum	Denver	01 007 1 3 009
Strasburg	Strasburg	01 006 1 4 008
Thornton	Thornton	01 002 1 5 003
Westminster	Westminster	01 007 1 3 010
02 ALAMOSA COUNTY		
Alamosa	Alamosa	02 074 3 3 112
Sangre de Cristo	Mosca	02 075 3 4 113
03 ARAPAHOE COUNTY		
Arapahoe	Littleton	03 011 1 3 016
Aurora Central	Aurora	03 013 1 3 017
Aurora Gateway	Aurora	03 013 1 3 241
Aurora Hinkley	Aurora	03 013 1 3 018
Byers	Byers	03 014 1 4 019
Cherry Creek	Englewood	03 010 1 3 013
Deer Trail	Deer Trail	03 012 1 5 014
Englewood	Englewood	03 009 1 3 011
Heritage	Littleton	03 011 1 3 233
Littleton	Littleton	03 011 1 3 015
Sheridan	Fort Logan	03 009 1 3 012
Smoky Hill	Englewood	03 010 1 3 248
Street Academy	Aurora	03 013 1 3 243
04 ARCHULETA COUNTY		
Pagosa Springs	Pagosa Springs	04 141 4 5 183
05 BACA COUNTY		
Campo	Campo	05 080 3 4 118
Pritchett	Pritchett	05 077 3 4 115
Springfield	Springfield	05 078 3 5 116
Vilas	Vilas	05 079 3 4 117
Walsh	Walsh	05 076 3 4 114
06 BENT COUNTY		
Las Animas	Las Animas	06 081 3 5 119
McClave	McClave	06 082 3 4 120
07 BOULDER COUNTY		
Boulder	Boulder	07 016 1 3 023
Broomfield	Broomfield	07 016 1 3 024
Centaurus	Lafayette	07 016 1 4 026
Erie	Erie	07 015 1 4 020
Fairview	Boulder	07 016 1 3 025
Highland Baptist	Boulder	07 016 1 4 246
Lafayette	Lafayette	07 016 1 4 247
Longmont	Longmont	07 015 1 3 021
Lyons	Lyons	07 015 1 4 022
Nederland	Nederland	07 016 1 4 028
Niwot	Niwot	07 015 1 4 234
St. Vrain	Longmont	07 015 1 4 235
08 CHAFFEE COUNTY		
Buena Vista	Buena Vista	08 142 4 5 184
Salida	Salida	08 143 4 5 185
09 CHEYENNE COUNTY		
Arapahoe	Arapahoe	09 085 2 4 123
Cheyenne Wells	Cheyenne Wells	09 084 2 4 122
Kit Carson	Kit Carson	09 083 2 4 121
10 CLEAR CREEK COUNTY		
Idaho Springs	Idaho Springs	10 017 1 4 029
11 CONEJOS COUNTY		
Antonito	Antonito	11 088 3 5 126
Centauri	La Jara	11 085 3 4 124
Sanford	Sanford	11 087 3 5 125
12 COSTILLA COUNTY		
Centennial	San Luis	12 089 3 3 127
Sierra Grande	Blanca	12 090 3 5 128
13 CROWLEY COUNTY		
Crowley County	Ordway	13 091 3 5 129
14 CUSTER COUNTY		
Custer County Consolidated	Westcliffe	14 092 3 4 130
15 DELTA COUNTY		
Cedaredge	Cedaredge	15 144 4 4 186
Delta	Delta	15 144 4 5 187
Hotchkiss	Hotchkiss	15 144 4 4 188
Paonia	Paonia	15 144 4 5 189
16 DENVER COUNTY		
Abraham Lincoln	Denver	16 018 1 3 033
East	Denver	16 018 1 3 030
George Washington	Denver	16 018 1 3 037
John F. Kennedy	Denver	16 018 1 4 032
Manual	Denver	16 018 1 3 034
North	Denver	16 018 1 3 035
South	Denver	16 018 1 3 036
Thomas Jefferson	Denver	16 018 1 5 031
West	Denver	16 018 1 3 038
17 DOLORES COUNTY		
Dolores County	Dove Creek	17 146 4 5 190
18 DOUGLAS COUNTY		
Douglas County	Castle Rock	18 019 1 3 039
19 EAGLE COUNTY		
Battle Mountain	Minturn	19 146 4 4 191
Eagle Valley	Gypsum	19 146 4 4 192
20 ELBERT COUNTY		
Agate	Agate	20 097 2 4 135
Big Sandy/Simla	Simla	20 095 2 5 133
Elbert	Elbert	20 096 3 4 134
Elizabeth	Elizabeth	20 093 3 4 131
Kiowa	Kiowa	20 094 3 4 132
21 EL PASO COUNTY		
Air Academy	USAF Academy	21 027 3 3 050
Calhan	Calhan	21 029 3 5 040
Cheyenne Mountain	Colorado Springs	21 025 3 3 047
Coronado	Colorado Springs	21 024 3 3 044
Edison	Yoder	21 033 3 5 056
Educational Opportunity Program	Colorado Springs	21 024 3 3 244
Ellicott	Calhan	21 028 3 5 051
Falcon	Peyton	21 032 3 4 055
Fountain	Fountain	21 023 3 5 043
Hanover	Colorado Springs	21 030 3 5 053
Harrison	Colorado Springs	21 021 3 5 041
Lewis-Palmer	Monument	21 031 3 5 054
Manitou Springs	Manitou Springs	21 026 3 5 049
Miami-Yoder	Rush	21 034 3 5 057
Mitchell	Colorado Springs	21 024 3 3 045
Palmer	Colorado Springs	21 024 3 3 046
Peyton	Peyton	21 029 3 5 052
Thomas Doherty	Colorado Springs	21 024 3 3 250
Wasson	Colorado Springs	21 024 3 3 047
Widefield	Security	21 022 3 3 042
22 FREMONT COUNTY		
Canon City	Canon City	22 098 3 3 136
Florence	Florence	22 099 3 5 137
Fremont	Cotopaxi	22 100 3 5 138
23 GARFIELD COUNTY		
Basalt	Basalt	23 148 4 4 193
Glenwood Springs	Glenwood Springs	23 149 4 5 194
Grand Valley	Grand Valley	23 150 4 4 197
Rifle	Rifle	23 149 4 5 196
Roaring Fork	Roaring Fork	23 148 4 4 195
25 GRAND COUNTY		
Middle Park	Granby	25 152 4 4 199
West Grand	Kremmling	25 151 4 5 198
26 GUNNISON COUNTY		
Gunnison	Gunnison	26 153 4 5 200
28 HUERFANO COUNTY		
La Veta	La Veta	28 102 3 4 140
Walsenburg	Walsenburg	28 101 3 5 139
29 JACKSON COUNTY		
North Park	Walden	29 154 4 4 201
30 JEFFERSON COUNTY		
Alameda	Denver	30 035 1 3 058
Arvada	Arvada	30 035 1 3 059
Arvada West	Arvada	30 035 1 3 060
Bear Creek	Morrison	30 035 1 3 261
Columbine	Littleton	30 035 1 3 215
Evergreen	Evergreen	30 035 1 3 062
Golden	Golden	30 035 1 3 063
Green Mountain	Denver	30 035 1 3 228
Jefferson	Denver	30 035 1 3 064
Lakewood	Denver	30 035 1 3 065
Pomona	Arvada	30 035 1 3 240
Wheatridge	Wheatridge	30 035 1 3 066
31 KIOWA COUNTY		
Eads	Eads	31 103 3 5 141
Plainview	Sheridan Lake	31 104 3 4 142
32 KIT CARSON COUNTY		
Bethune	Bethune	32 109 2 4 147
Burlington	Burlington	32 110 2 4 149
Flagler	Flagler	32 105 2 4 143
Hi-Plains	Seibert	32 107 2 4 145
Stratton	Stratton	32 108 2 4 146
33 LAKE COUNTY		
Lake County	Leadville	33 155 4 3 202

APPENDIX B - SECONDARY SYSTEM

SECONDARY SCHOOLS - CONTINUED

34 LA PLATA COUNTY		
Bayfield	Bayfield	34 157 4 5 204
Durango	Durango	34 156 4 5 203
Ignacio	Ignacio	34 158 4 5 205
35 LARIMER COUNTY		
Berthoud	Berthoud	35 041 2 4 073
Estes Park	Estes Park	35 042 2 4 075
Fort Collins	Fort Collins	35 040 2 3 071
Harmony Camp	Fort Collins	35 040 2 4 236
Loveland	Loveland	35 047 2 3 074
Poudre	Fort Collins	35 040 2 3 072
Rocky Mountain	Fort Collins	35 040 2 3 242
Washington New School	Loveland	35 041 2 4 237
36 LAS ANIMAS COUNTY		
Aguilar	Aguilar	36 114 3 5 152
Branson	Branson	36 115 3 5 153
Hoehne	Hoehne	36 113 3 5 151
Kim	Kim	36 116 3 4 154
Primero	Weston	36 112 3 4 150
Trinidad	Trinidad	36 111 3 5 148
37 LINCOLN COUNTY		
Arriba	Arriba	37 121 2 4 159
Genoa	Genoa	37 119 2 5 157
Hugo	Hugo	37 117 2 5 155
Karval	Karval	37 120 2 4 158
Limon	Limon	37 118 2 4 156
38 LOGAN COUNTY		
Caliche	Iliff	38 043 2 5 245
Fleming	Fleming	38 044 2 5 079
Merino	Merino	38 045 2 5 080
Peetz	Peetz	38 046 2 4 081
Sterling	Sterling	38 043 2 3 078
39 MESA COUNTY		
Central	Grand Junction	39 161 4 3 208
De Beque	De Beque	39 159 4 4 206
Fruita-Monument High School	Fruita	39 161 4 3 210
Gateway Undivided	Gateway	39 161 4 3 212
Grand Junction	Grand Junction	39 161 4 3 209
Palisade	Palisade	39 161 4 4 211
Plateau Valley	Collbran	39 160 4 5 207
40 MINERAL COUNTY		
Creede	Creede	40 122 3 4 160
41 MOFFAT COUNTY		
Moffat	Craig	41 162 4 3 213
42 MONTEZUMA COUNTY		
Dolores	Dolores	42 164 4 4 215
Mancos	Mancos	42 165 4 5 216
Montezuma-Cortez	Cortez	42 163 4 5 214
43 MONTROSE COUNTY		
Montrose	Montrose	43 166 4 3 217
Nucla	Naturita	43 167 4 3 219
Olathe	Olathe	43 166 4 5 218
44 MORGAN COUNTY		
Brush	Brush	44 047 2 5 082
Fort Morgan	Fort Morgan	44 048 2 3 083
Weldon Valley	Weldona	44 049 2 5 084
Wiggins	Wiggins	44 050 2 4 085
45 OTERO COUNTY		
Cheraw	Cheraw	45 127 3 4 165
Fowler	Fowler	45 126 3 5 164
La Junta	La Junta	45 123 3 5 161
Manzanola	Manzanola	45 125 3 5 163
Rocky Ford	Rocky Ford	45 124 3 5 162
Swink	Swink	45 128 3 4 166
46 OURAY COUNTY		
Ouray	Ouray	46 168 4 4 220
Ridgway	Ridgway	46 169 4 4 221
47 PARK COUNTY		
Platte Canyon	Bailey	47 036 2 4 067
South Park	Fairplay	47 037 2 4 068
48 PHILLIPS COUNTY		
Haxtun	Haxtun	48 051 2 5 086
Holyoke	Holyoke	48 052 2 5 087
49 PITKIN COUNTY		
Aspen	Aspen	49 170 4 5 222
50 PROWERS COUNTY		
Granada	Granada	50 129 3 5 167
Holly	Holly	50 131 3 4 169
Lamar	Lamar	50 130 3 3 168
Wiley	Wiley	50 132 3 4 170
51 PUEBLO COUNTY		
Centennial	Pueblo	51 133 3 3 171
Central	Pueblo	51 133 3 3 172
East	Pueblo	51 133 3 3 173
Pueblo County	Pueblo	51 134 3 3 175
Rye	Pueblo	51 136 3 4 176
South	Pueblo	51 133 3 3 174
52 RIO BLANCO COUNTY		
Meeker	Meeker	52 171 4 5 223
Rangely	Rangely	52 172 4 5 224
53 RIO GRANDE COUNTY		
Del Norte	Del Norte	53 135 3 5 177
Monte Vista	Monte Vista	53 136 3 5 178
Sargent	Monte Vista	53 137 3 4 179
54 ROUTT COUNTY		
Hayden	Hayden	54 173 4 4 225
Soroco	Oak Creek	54 175 4 5 227
Steamboat Springs	Steamboat Springs	54 174 4 5 226
55 SAGUACHE COUNTY		
Center	Center	55 140 3 4 182
Moffat	Moffat	55 139 3 4 181
Mountain Valley	Saguache	55 138 3 4 180
56 SAN JUAN COUNTY		
Silverton	Silverton	56 176 4 4 228
57 SAN MIGUEL COUNTY		
Norwood	Norwood	57 178 4 5 230
Telluride	Telluride	57 177 4 4 229
58 SEDGWICK COUNTY		
Julesburg	Julesburg	58 053 2 5 088
Revere	Ovid	58 054 2 4 089
59 SUMMIT COUNTY		
Summit County	Frisco	59 179 4 4 231
60 TELLER COUNTY		
Cripple Creek	Cripple Creek	60 038 3 4 069
Woodland Park	Woodland Park	60 039 3 4 070
61 WASHINGTON COUNTY		
Akron	Akron	61 055 2 5 090
Arickaree	Anton	61 056 2 4 291
Lone Star	Otis	61 058 2 4 093
Otis	Otis	61 057 2 4 092
Woodlin	Woodrow	61 059 2 4 094
62 WELD COUNTY		
Briggsdale	Briggsdale	62 069 2 4 105
Eaton	Eaton	62 061 2 5 096
Fort Lupton	Fort Lupton	62 067 2 5 103
Greeley Central	Greeley	62 065 2 3 100
Greeley West	Greeley	62 065 2 3 101
Highland	Ault	62 068 2 5 104
Pawnee	Grover	62 071 2 5 107
Platte Valley	Kersey	62 066 2 4 102
Prairie	New Raymer	62 070 2 4 106
Roosevelt	Johnstown	62 064 2 5 099
University	Greeley	62 306 2 4 232
Valley	Gilcrest	62 063 2 5 095
Weld Central	Keenesburg	62 062 2 4 097
Windsor	Windsor	62 063 2 4 098
63 YUMA COUNTY		
Idalia	Idalia	63 073 2 4 110
Liberty	Joes	63 077 2 4 108
Wray	Wray	63 073 2 5 111
Yuma	Yuma	63 072 2 5 109

APPENDIX B - SECONDARY SYSTEM



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JUNIOR HIGH SCHOOLS

01 ADAMS COUNTY

Adams City	Commerce City	01 003 1 2 974
Carpenter	Denver	01 007 1 2 978
Clear Lake	Denver	01 007 1 2 979
Coronado Hills	Denver	01 002 1 2 970
Dewey	Denver	01 001 1 2 968
Hodgkins	Denver	01 007 1 2 980
Kearney	Commerce City	01 003 1 2 975
Merritt Hutton	Thornton	01 002 1 2 971
North Brighton	Brighton	01 004 1 2 976
Northeast	Northglenn	01 002 1 2 972
Northglenn	Northglenn	01 002 1 2 977
North Huron	Northglenn	01 002 1 2 978
Shaw Heights	Westminster	01 007 1 2 981
South Huron	Northglenn	01 002 1 2 973
Vikan	Brighton	01 004 1 2 977
Wyco	Northglenn	01 002 1 2 947
York	Denver	01 001 1 2 969
Westlake Village	Northglenn	01 002 1 2 464

02 ALAMOSA COUNTY

Alamosa	Alamosa	02 074 3 2 967

03 ARAPAHOE COUNTY

Cherry Creek Middle	Englewood	03 010 1 2 985
Cherry Creek West Middle	Englewood	03 010 1 2 986
East	Aurora	03 013 1 2 917
Euclid	Littleton	03 011 1 2 987
Flood	Englewood	03 008 1 2 942
Goddard Middle	Littleton	03 011 1 2 990
Grant	Littleton	03 011 1 2 948
Isaac Newton	Littleton	03 011 1 2 989
North	Aurora	03 013 1 2 915
Sheridan Middle	Englewood	03 009 1 2 994
Sinclair	Englewood	03 008 1 2 943
South	Aurora	03 013 1 2 916
West	Aurora	03 013 1 2 918

06 BENT COUNTY

Las Animas	Las Animas	06 081 3 2 932

07 BOULDER COUNTY

Baseline	Boulder	07 016 1 2 993
Broomfield	Broomfield	07 016 1 2 994
Burbank	Boulder	07 016 1 2 995
Casey	Boulder	07 016 1 2 996
Centennial	Boulder	07 016 1 2 997
Frederick	Longmont	07 015 1 2 991
Lafayette	Lafayette	07 016 1 2 400
Longmont	Longmont	07 015 1 2 919
Long's Peak	Longmont	07 015 1 2 970
Mead	Mead	07 015 1 2 992
Nevin Platt	Boulder	07 016 1 2 998
Southern Hills	Boulder	07 016 1 2 999

08 CHAFFEE COUNTY

Buena Vista	Buena Vista	08 142 4 2 401

16 DENVER COUNTY

Baker	Denver	16 018 1 2 901
Byers	Denver	16 018 1 2 902
Cole	Denver	16 018 1 2 903
Gove	Denver	16 018 1 2 910
Grant	Denver	16 018 1 2 955
Hamilton	Denver	16 018 1 2 402
Henry	Denver	16 018 1 2 411
Hill	Denver	16 018 1 2 911
Horace Mann	Denver	16 018 1 2 904
Kepner	Denver	16 018 1 2 912
Kunsmiller	Denver	16 018 1 2 926
Lake	Denver	16 018 1 2 913
Merrill	Denver	16 018 1 2 403
Morey	Denver	16 018 1 2 905
Place	Denver	16 018 1 2 956
Rishel	Denver	16 018 1 2 914
Skinner	Denver	16 018 1 2 906
Smiley	Denver	16 018 1 2 404

18 DOUGLAS COUNTY

Douglas	[illegible] Creek	18 019 1 2 405

21 EL PASO COUNTY

Air Academy	USAF Academy	21 027 1 2 412
Carmel	Colorado Springs	21 021 1 2 406
Carson	Fountain	21 023 1 2 411
Charles M. Russell	Colorado Springs	21 024 1 2 964
East	Colorado Springs	21 024 1 2 965
Emerson	Colorado Springs	21 024 1 2 907
Fountain	Fountain	21 023 1 2 410
Gorman	Colorado Springs	21 021 1 2 407
Horace Mann	Colorado Springs	21 024 1 2 949
North	Colorado Springs	21 024 1 2 959
Oliver Wendell Holmes	Colorado Springs	21 024 1 2 963
South	Colorado Springs	21 024 1 2 919
Sproul	Security	21 022 1 2 408
Washington Irving	Colorado Springs	21 024 1 2 962
Watson	Security	21 022 1 2 409
West	Colorado Springs	21 024 1 2 961

22 FREMONT COUNTY

Canon City	Canon City	22 098 3 2 924

23 GARFIELD COUNTY

Glenwood Springs	Glenwood Springs	23 148 4 2 413

26 GUNNISON COUNTY

Ruland	Gunnison	26 153 4 2 414

30 JEFFERSON COUNTY

Alameda	Denver	30 035 1 2 930
Arvada	Arvada	30 035 1 2 946
Bell	Golden	30 035 1 2 945
Belmont	Denver	30 035 1 2 931
Carmody	Denver	30 035 1 2 929
Creighton	Denver	30 035 1 2 933
Drake	Denver	30 035 1 2 934
Dunstan	Denver	30 035 1 2 932
East Arvada	Arvada	30 035 1 2 944
Evergreen	Evergreen	30 035 1 2 935
Everitt	Wheatridge	30 035 1 2 936
Golden	Golden	30 035 1 2 937
Ken Caryl	Littleton	30 035 1 2 948
Lakewood	Denver	30 035 1 2 938
Manning	Golden	30 035 1 2 939
North Arvada	Arvada	30 035 1 2 941
Oberon	Arvada	30 035 1 2 940
O'Connell	Denver	30 035 1 2 942
West Jefferson	Conifer	30 035 1 2 943
Wheatridge	Wheatridge	30 035 1 2 900

33 LAKE COUNTY

Lake County	Leadville	33 155 4 2 416

34 LA PLATA COUNTY

Miller	Miller	34 156 4 2 417

35 LARIMER COUNTY

Blevins	Fort Collins	35 040 2 2 950
Boltz	Fort Collins	35 040 2 2 451
Cache la Poudre	La Porte	35 040 2 2 953
Conrad Ball	Loveland	35 041 2 2 452
Lesher	Fort Collins	35 040 2 2 951
Lincoln	Fort Collins	35 040 2 2 952
Reed	Loveland	35 041 2 2 973
Timnath	Timnath	35 040 2 2 954
Wellington	Wellington	35 040 2 2 967

38 LOGAN COUNTY

Sterling	Sterling	38 043 2 2 419

39 MESA COUNTY

Bookcliff	Grand Junction	39 161 4 2 909
East	Grand Junction	39 161 4 2 420
Fruita	Fruita	39 161 4 2 968
Orchard Mesa	Grand Junction	39 161 4 2 421
West	Grand Junction	39 161 4 2 422

41 MOFFAT COUNTY

Craig	Craig	41 162 4 2 423

42 MONTEZUMA COUNTY

Cortez	Cortez	42 163 4 2 424

43 MONTROSE COUNTY

Centennial	Montrose	43 166 4 2 455
Columbine	Montrose	43 166 4 2 425
Naturita	Naturita	43 167 4 2 427
Olathe	Olathe	43 166 4 2 426

44 MORGAN COUNTY

Brush	Brush	44 047 2 2 428
Fort Morgan	Fort Morgan	44 046 2 2 965

45 OTERO COUNTY

Jefferson	Rocky Ford	45 124 3 2 430
La Junta	La Junta	45 123 3 2 429

49 PITKIN COUNTY

Aspen Middle	Aspen	49 170 4 2 431

50 PROWERS COUNTY

Lamar	Lamar	50 130 3 2 432

51 PUEBLO COUNTY

Beulah	Beulah	51 134 3 2 439
Corwin	Pueblo	51 133 3 2 433
Excelsior	Pueblo	51 134 3 2 440
Freed	Pueblo	51 133 3 2 434
Heaton	Pueblo	51 133 3 2 435
Pitts	Pueblo	51 133 3 2 436
Pleasant View	Pueblo	51 134 3 2 441
Pueblo	Pueblo	51 133 3 2 921
Risley	Pueblo	51 133 3 2 928
Roncalli Middle	Pueblo	51 133 3 2 437
Soton Middle	Pueblo	51 133 3 2 438
Vineland	Pueblo	51 134 3 2 442

53 RIO GRANDE COUNTY

Monte Vista	Monte Vista	53 136 3 2 443

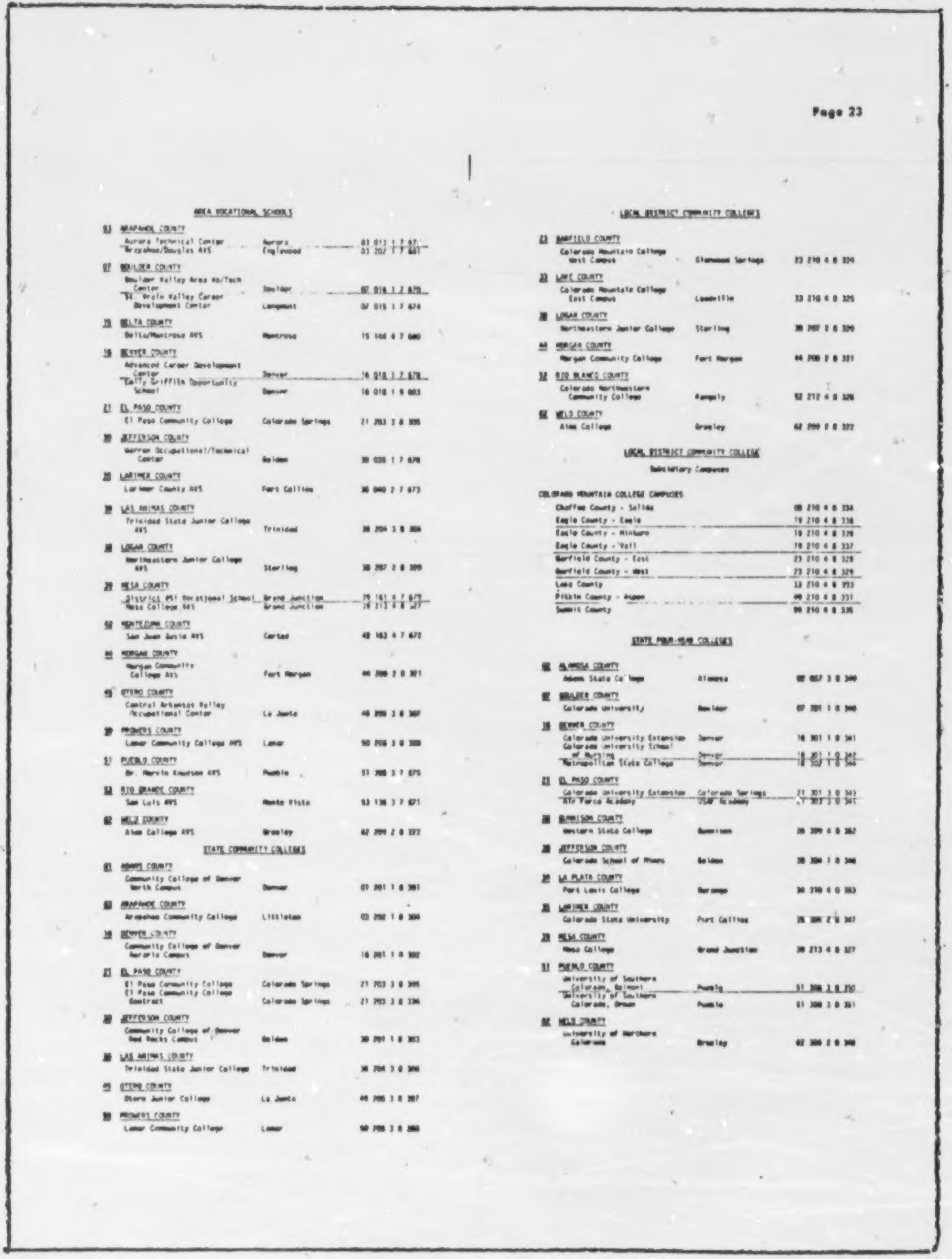
54 ROUTT COUNTY

Steamboat Springs	Steamboat Springs	54 174 4 2 444

62 WELD COUNTY

Heath	Greeley	62 065 2 2 490
John Evans	Greeley	62 065 2 2 449
La Salle Middle	La Salle	62 060 2 2 445
Milliken Middle	Milliken	62 064 2 2 448
Platteville Middle	Platteville	62 060 2 2 446
Weld Central	Keenesburg	62 062 2 2 447

APPENDIX B - SECONDARY SYSTEM



AREA VOCATIONAL SCHOOLS

03	ARAPAHOE COUNTY		
	Aurora Technical Center	Aurora	03 013 1 7 671
	Arapahoe/Douglas AVS	Englewood	03 202 1 7 681
07	BOULDER COUNTY		
	Boulder Valley Area Vo/Tech Center	Boulder	07 016 1 7 675
	St. Vrain Valley Career Development Center	Longmont	07 015 1 7 674
15	DELTA COUNTY		
	Delta/Montrose AVS	Montrose	15 104 4 7 680
16	DENVER COUNTY		
	Advanced Career Development Center	Denver	16 018 1 7 678
	Emily Griffith Opportunity School	Denver	16 018 1 9 003
21	EL PASO COUNTY		
	El Paso Community College	Colorado Springs	21 203 3 8 305
30	JEFFERSON COUNTY		
	Warren Occupational/Technical Center	Golden	30 035 1 7 676
35	LARIMER COUNTY		
	Larimer County AVS	Fort Collins	35 040 2 7 673
36	LAS ANIMAS COUNTY		
	Trinidad State Junior College AVS	Trinidad	36 204 3 8 306
38	LOGAN COUNTY		
	Northeastern Junior College AVS	Sterling	38 207 2 8 309
39	MESA COUNTY		
	District #51 Vocational School	Grand Junction	39 161 4 7 679
	Mesa College AVS	Grand Junction	39 213 4 8 327
42	MONTEZUMA COUNTY		
	San Juan Basin AVS	Cortez	42 163 4 7 672
44	MORGAN COUNTY		
	Morgan Community College AVS	Fort Morgan	44 208 2 8 321
45	OTERO COUNTY		
	Central Arkansas Valley Occupational Center	La Junta	45 205 3 8 307
50	PROWERS COUNTY		
	Lamar Community College AVS	Lamar	50 206 3 8 308
51	PUEBLO COUNTY		
	Dr. Marvin Knudson AVS	Pueblo	51 080 3 7 675
53	RIO GRANDE COUNTY		
	San Luis AVS	Monte Vista	53 136 3 7 671
62	WELD COUNTY		
	Aims College AVS	Greeley	62 209 2 8 322

STATE COMMUNITY COLLEGES

01	ADAMS COUNTY		
	Community College of Denver North Campus	Denver	01 201 1 8 301
03	ARAPAHOE COUNTY		
	Arapahoe Community College	Littleton	03 202 1 8 304
16	DENVER COUNTY		
	Community College of Denver Auraria Campus	Denver	16 201 1 8 302
21	EL PASO COUNTY		
	El Paso Community College	Colorado Springs	21 203 3 8 305
	El Paso Community College Contract	Colorado Springs	21 203 3 8 336
30	JEFFERSON COUNTY		
	Community College of Denver Red Rocks Campus	Golden	30 201 1 8 303
36	LAS ANIMAS COUNTY		
	Trinidad State Junior College	Trinidad	36 204 3 8 306
45	OTERO COUNTY		
	Otero Junior College	La Junta	45 205 3 8 307
50	PROWERS COUNTY		
	Lamar Community College	Lamar	50 206 3 8 308

LOCAL DISTRICT COMMUNITY COLLEGES

23	GARFIELD COUNTY		
	Colorado Mountain College West Campus	Glenwood Springs	23 210 4 8 324
33	LAKE COUNTY		
	Colorado Mountain College East Campus	Leadville	33 210 4 8 325
38	LOGAN COUNTY		
	Northeastern Junior College	Sterling	38 207 2 8 320
44	MORGAN COUNTY		
	Morgan Community College	Fort Morgan	44 208 2 8 321
52	RIO BLANCO COUNTY		
	Colorado Northwestern Community College	Rangely	52 212 4 8 326
62	WELD COUNTY		
	Aims College	Greeley	62 209 2 8 322

LOCAL DISTRICT COMMUNITY COLLEGE

Subsidiary Campuses

COLORADO MOUNTAIN COLLEGE CAMPUSES

Chaffee County - Salida	08 210 4 8 334
Eagle County - Eagle	19 210 4 8 338
Eagle County - Minturn	19 210 4 8 339
Eagle County - Vail	19 210 4 8 337
Garfield County - East	23 210 4 8 328
Garfield County - West	23 210 4 8 329
Lake County	33 210 4 8 333
Pitkin County - Aspen	49 210 4 8 331
Summit County	59 210 4 8 335

STATE FOUR-YEAR COLLEGES

02	ALAMOSA COUNTY		
	Adams State College	Alamosa	02 007 3 8 349
07	BOULDER COUNTY		
	Colorado University	Boulder	07 301 1 8 340
16	DENVER COUNTY		
	Colorado University Extension	Denver	16 301 1 8 341
	Colorado University School of Nursing	Denver	16 301 1 8 342
	Metropolitan State College	Denver	16 302 1 8 344
21	EL PASO COUNTY		
	Colorado University Extension	Colorado Springs	21 301 3 8 341
	Air Force Academy	USAF Academy	21 303 3 8 341
26	GUNNISON COUNTY		
	Western State College	Gunnison	26 304 4 8 362
30	JEFFERSON COUNTY		
	Colorado School of Mines	Golden	30 306 1 8 346
34	LA PLATA COUNTY		
	Fort Lewis College	Durango	34 310 4 8 363
35	LARIMER COUNTY		
	Colorado State University	Fort Collins	35 305 2 8 347
39	MESA COUNTY		
	Mesa College	Grand Junction	39 213 4 8 327
51	PUEBLO COUNTY		
	University of Southern Colorado, Belmont	Pueblo	51 308 3 8 350
	University of Southern Colorado, Orman	Pueblo	51 308 3 8 351
62	WELD COUNTY		
	University of Northern Colorado	Greeley	62 309 2 8 348

APPENDIX B - SECONDARY SYSTEM

BOARDS OF COOPERATIVE SERVICES

01 ADAMS COUNTY		
Adams County BOCS	Brighton	01 401 1 9 701
02 ALAMOSA COUNTY		
San Luis Valley BOCS	Alamosa	02 410 3 9 710
03 ARAPAHOE COUNTY		
Southeast Metropolitan BOCS	Englewood	03 402 1 9 702
07 BOULDER COUNTY		
Northern Colorado Education	Boulder	07 403 1 9 703
15 DELTA COUNTY		
~~Delta/Montrose BOCS~~	~~Delta~~	~~15 420 4 9 720~~
Gunnison Valley BOCS	Delta	15 415 4 9 715
21 EL PASO COUNTY		
Pikes Peak BOCS	Colorado Springs	21 404 3 9 704
30 JEFFERSON COUNTY		
Jeffco BOCS	Lakewood	30 405 1 9 705
32 KIT CARSON COUNTY		
East Central BOCS	Seibert	32 411 2 9 711
33 LAKE COUNTY		
Mountain BOCS	Leadville	33 416 4 9 716
34 LA PLATA COUNTY		
San Juan BOCS	Durango	34 417 4 9 717
35 LARIMER COUNTY		
Larimer BOCS	Fort Collins	35 409 2 9 709
42 MONTEZUMA COUNTY		
~~San Juan Basin Area Vocational School BOCS~~	~~Cortez~~	~~42 421 4 9 721~~
Southwest BOCS	Cortez	42 418 4 9 718
44 MORGAN COUNTY		
South Platte Valley BOCS	Fort Morgan	44 408 2 9 708
45 OTERO COUNTY		
Arkansas Valley BOCS	La Junta	45 412 3 9 712
48 PHILLIPS COUNTY		
Northeastern BOCS	Haxtun	48 407 2 9 707
50 PROWERS COUNTY		
Southeastern BOCS	Lamar	50 413 3 9 713
51 PUEBLO COUNTY		
South Central BOCS	Pueblo	51 414 3 9 714
52 RIO BLANCO COUNTY		
Northwest Colorado BOCS	Meeker	52 419 3 9 719
62 WELD COUNTY		
Weld BOCS	La Salle	62 406 2 9 706

SPECIAL EDUCATIONAL FACILITIES

01 ADAMS COUNTY		
Lucy Auld Special	Denver	01 001 1 9 601
16 DENVER COUNTY		
Boettcher	Denver	16 018 1 9 602
~~Career Education Center~~	~~Denver~~	~~16 018 1 9 605~~
Crittenden	Denver	16 699 1 9 612
~~Denver Metro Youth Center~~	~~Denver~~	~~16 018 1 9 604~~
Emily Griffith Opportunity School	Denver	16 018 1 9 603
Laradon Hall	Denver	16 600 1 9 611
22 FREMONT COUNTY		
College of the Canons	Canon City	22 098 3 9 647
30 JEFFERSON COUNTY		
Jeffco Metro Youth Center	Lakewood	(Joint with Denver)
~~Martinson Elementary~~	~~Lakewood~~	~~30 035 1 9 613~~
Teen Mothers	Lakewood	30 035 1 9 614
Fletcher Miller Special	Lakewood	30 035 1 9 615
38 LOGAN COUNTY		
~~Anna C. Petteys~~	~~Sterling~~	~~38 003 2 9 610~~
Harris	Sterling	38 063 2 9 604
39 MESA COUNTY		
~~Occupational Center~~	~~Grand Junction~~	~~39 161 4 9 606~~
Project 0-5	Grand Junction	39 161 4 9 607

INSTITUTIONS

03 ARAPAHOE COUNTY		
Fort Logan Mental Health Center	Fort Logan	03 901 1 9 631
08 CHAFFEE COUNTY		
Colorado State Reformatory	Buena Vista	08 913 4 9 643
16 DENVER COUNTY		
Colorado Youth Center	Denver	16 902 1 9 632
21 EL PASO COUNTY		
School for the Deaf and Blind	Colorado Springs	21 903 3 9 633
22 FREMONT COUNTY		
Golden Key Vocational School	Canon City	22 911 3 9 641
28 HUERFANO COUNTY		
Lathrop Park Youth Camp	Walsenburg	28 909 3 9 639
30 JEFFERSON COUNTY		
Colorado Law Enforcement Academy	Golden	30 908 1 9 644
~~Division of Youth Services~~	~~Denver~~	~~30 506 1 9 616~~
Golden Gate	Golden	30 000 0 0 001
~~Lookout Mtn. School for Boys~~	~~Golden~~	~~30 000 0 0 003~~
Mountview School for Girls	Denver	30 000 0 0 004
State Home & Training School	Wheatridge	30 907 1 9 637
35 LARIMER COUNTY		
Gateway Rehabilitation	Fort Collins	35 514 2 9 646
39 MESA COUNTY		
State Home & Training School	Grand Junction	39 912 4 9 642
45 OTERO COUNTY		
Colorado Boys Ranch	La Junta	45 910 3 9 640
51 PUEBLO COUNTY		
Colorado State Hospital	Pueblo	51 906 3 9 638

PAROCHIAL SCHOOLS

16 DENVER COUNTY		
Central Catholic	Denver	16 708 1 6 854
~~Denver Christian~~	~~Denver~~	~~16 708 1 6 848~~
Denver Lutheran	Denver	16 710 1 6 847
~~Denver Mile High~~	~~Denver~~	~~16 720 1 6 852~~
Holy Family	Denver	16 707 1 6 847
St. Mary's	Denver	16 708 1 6 853
30 JEFFERSON COUNTY		
Colorado Academy	Morrison	30 709 1 6 850
54 ROUTT COUNTY		
Whitman	Steamboat Springs	54 174 4 6 858

APPENDIX B - SECONDARY SYSTEM

TABLE 2 - VOCATIONAL EDUCATION BULLETIN - JULY OF 1978

THIS TABLE SUPERSEDES TABLE 2 OF AUGUST 1975 AND ALL PREVIOUS VE-152 TABLES

State Board for Community Colleges and Occupational Education
207 State Services Building
Denver, Colorado 80203

U.S. OFFICE OF EDUCATION INSTRUCTIONAL PROGRAM CODES AND TITLES

GENERAL INFORMATION

Only the following areas have approved COOP vocational programs.

- Trade and Industrial (I.C.E.)
- Home Economics (H.E.R.O. COOP)
- Distributive Education and Multi-Occupational COOP
- Special Programs (Part G COOP)

Cooperative instruction in the following areas has not been approved under COOP codes.

- Business and Office Education
- Vocational Agriculture
- Technical Education
- Health Occupations

EXAMPLE. COOP instruction in Business and Office areas might have been approved under 14.0700.0 (Secretarial and Related Occupations) or other Business and Office codes. Similar situations might be found in Vocational Agriculture and Technical Education.

VOCATIONAL AGRICULTURE

- 01.0100 Agricultural Production
  - 01.0101 Animal Science
  - 01.0102 Animal Health Technology
  - 01.0104 Farm Business
  - 01.0107 Farrier (horseshoer)
  - 01.0108 Dairy
  - 01.0109 Beef
  - 01.0110 Swine
  - 01.0111 Horses
  - 01.0112 Poultry
  - 01.0113 Sheep
  - 01.0199 Agricultural Production, Other
- 01.0200 Agricultural Supplies/Services
  - 01.0201 Agricultural Chemicals
  - 01.0202 Feeds
  - 01.0203 Seeds
  - 01.0204 Fertilizers (Plant Food)
  - 01.0205 Feed Mill Operations
  - 01.0206 Farm Cooperative Occupations
  - 01.0299 Agricultural Supplies/Services, Other
- 01.0300 Agricultural Mechanics
  - 01.0301 Agricultural Power and Machinery
  - 01.0303 Soil Management
  - 01.0304 Water Management
  - 01.0399 Agricultural Mechanics, Other
- 01.0400 Agricultural Products
- 01.0500 Ornamental Horticulture
  - 01.0503 Greenhouse Operation and Management
  - 01.0504 Landscaping
  - 01.0505 Nursery Operation and Management
  - 01.0506 Turf Management
  - 01.0599 Ornamental Horticulture, Other
- 01.0600 Agricultural Resources
  - 01.0602 Recreation
  - 01.0604 Wildlife
  - 01.0606 Range
  - 01.0699 Agricultural Resources, Other
- 01.0700 Forestry
- 01.9900 Agriculture, Other

DISTRIBUTIVE EDUCATION

NOTE: SECONDARY D.E. PROGRAMS. ALL SECONDARY D.E. PROGRAMS WHICH ARE NOT SPECIALIZED IN ONE OF THE 04 O.E. CODE AREAS (E.G., FASHION MERCHANDISING (04.0200), REAL ESTATE (04.1700), ETC.) WILL USE THE O.E. CODE 04.0000 TO IDENTIFY THE PROGRAM. HOWEVER, THE O.E. CODES 04.0100 THRU 04.3100 WILL BE USED IN ITEM #23 ON THE VE-135 TO IDENTIFY EACH STUDENT'S OCCUPATIONAL OBJECTIVE.

- 04.0000 COOP D.E. Programs
- 04.0100 Advertising Services
- 04.0200 Apparel and Accessories (Fashion Merchandising)
- 04.0300 Automotive
- 04.0400 Finance and Credit
- 04.0500 Floristry
- 04.0600 Food Distribution
- 04.0700 Food Services
- 04.0800 General Merchandise
  - 04.0801 Marketing Management
  - 04.0802 Sales Technology
  - 04.0803 Supervisory Management
- 04.0900 Hardware, Building Materials, Farm and Garden Supplies and Equipment
- 04.1000 Home Furnishings and Interior Design
- 04.1100 Hotel and Lodging
- 04.1200 Industrial Marketing
- 04.1300 Insurance
- 04.1400 International Trade
- 04.1500 Personal Services
- 04.1600 Petroleum
- 04.1700 Real Estate
- 04.1800 Recreation and Tourism
- 04.1900 Transportation
- 04.2000 Retail Trade, Other
  - 04.2001 Auctioneering Sales
- 04.3100 Wholesale Trade, Other
- 04.9900 Distributive Education, Other

HEALTH OCCUPATIONS EDUCATION

- 07.0100 Dental
  - 07.0101 Dental Assisting
  - 07.0102 Dental Hygiene
  - 07.0103 Dental Laboratory Technician
  - 07.0104 Dental Aide
  - 07.0199 Dental, Other
- 07.0200 Medical Laboratory Technician
  - 07.0203 Medical Laboratory Assistant
  - 07.0204 Medical Laboratory Technician
  - 07.0299 Medical Laboratory Technology, Other
- 07.0300 Nursing
  - 07.0301 Nursing (Associate Degree)
  - 07.0302 Practical (Vocational Nursing)
  - 07.0303 Nursing Assistant (Aide)
  - 07.0304 Psychiatric Technician
  - 07.0305 Surgical Technician (Operating Room Technician)
  - 07.0307 Home Health Aide
  - 07.0308 Nursing, Ward Clerk (Ward Manager)
  - 07.0309 Nursing, Physical Assessment for Nurses
  - 07.0310 R.N. Refresher Nursing
  - 07.0311 R.N. Operating Room
  - 07.0399 Nursing, Continuing Education, Other
- 07.0400 Rehabilitation
  - 07.0401 Occupational Therapy Technician
  - 07.0402 Physical Therapy Technician
  - 07.0403 Activity Director (Nursing Homes)
  - 07.0404 Rehabilitation Aide (Athletic Aide)
  - 07.0499 Rehabilitation, Other
- 07.0500 Radiologic
  - 07.0501 Radiologic Technology (X-Ray)
  - 07.0502 Radiation Therapy
  - 07.0503 Nuclear Medical Technology
  - 07.0599 Radiologic, Other
- 07.0600 Ophthalmic
  - 07.0601 Ophthalmic Dispensing
  - 07.0602 Orthoptics
  - 07.0603 Optometrist Assistant
  - 07.0699 Ophthalmic, Other

**NOTE: THIS CODE (07.0700) CANNOT BE USED IN ITEM #23 OF THE VE-135. LIST STUDENT'S SPECIFIC OCCUPATIONAL OBJECTIVE O.E. CODE IN ITEM # 23.

- **07.0700 Health Occupations Cluster (For Secondary Use Only)
- 07.0800 Mental Health Technology
  - 07.0801 Mental Health Technician
  - 07.0802 Mental Retardation Aide
  - 07.0803 Drug and Alcohol Abuse Technician
  - 07.0899 Mental Health Technology, Other
- 07.0900 Miscellaneous Health Occupations Education
  - 07.0901 E.K.G.
  - 07.0902 Respiratory Therapist
  - 07.0903 Respiratory Therapy Technician
  - 07.0904 Medical Assistant (Assistant in Physician's Office)
  - 07.0905 Central Supply Technician
  - 07.0906 Medical Insurance Clerk
  - 07.0907 Emergency Medical Technician (E.M.T.)
  - 07.0908 Food Services Supervisor
  - 07.0909 Mortuary Science Technician
  - 07.0910 Orthopedic Assistant
  - 07.0911 Medical Record Clerk
  - 07.0912 Medical Record Technician
  - 07.0913 Pharmaceutical Aide
  - 07.0914 First Aid
  - 07.9900 Health Occupations Education, Other

HOME ECONOMICS

*NOTE: SECONDARY LEVEL CONSUMER AND HOMEMAKING PROGRAMS USE O.E. CODE 09.0100 ONLY.

- *09.0100 Consumer and Homemaking: Preparation for Personal, Home and Family Living
  - 09.0101 Comprehensive Homemaking or Home Economics
  - 09.0102 Child Development
  - 09.0103 Clothing and Textiles
  - 09.0104 Consumer Education
  - 09.0106 Family Relations
  - 09.0107 Food and Nutrition
  - 09.0108 Home Management
  - 09.0109 Housing and Home Furnishing
  - 09.0199 Homemaking, Other
- Occupational Preparation Programs
  - 09.0201 Care and Guidance of Children
  - 09.0202 Clothing Management, Production and Services
  - 09.0203 Food Management, Production and Services (General)
  - 09.0204 Home Furnishings, Equipment and Services
  - 09.0205 Institutional and Home Management and Supporting Services
  - 09.0206 Dietetic Services
  - 09.0207 Food Management (Front of House)
  - 09.0208 Food Management (Back of House)
  - 09.0209 Social Services Technician
  - 09.0210 Special Education Aide
  - 09.2901 Occupational Preparation, Other

**NOTE: O.E. CODE 09.2902 CANNOT BE USED IN ITEM #23 OF THE VE-135. LIST STUDENT'S SPECIFIC OCCUPATIONAL OBJECTIVE O.E. CODE IN ITEM #23.

- **09.2902 COOP Home Economics Related Occupations
- 09.2903 In-School-Skills - Multi-Occupations
- 09.2904 Human Services Occupations

O.E. CODES

BUSINESS AND OFFICE OCCUPATIONS

*NOTE: SECONDARY LEVEL PROGRAMS USE THESE PROGRAM CODES ONLY - POST SECONDARY AND ADULT VOCATIONAL PROGRAMS USE ALL O.E. CODES.

- *14.0100 Accounting and Computing Occupations
- *14.0200 Business Data Processing Systems Occupations (General)
  - 14.0201 Keypunch (Data Entry)
  - 14.0202 Computer Operations
  - 14.0203 Programming
- *14.0300 General Office Clerical Occupations
  - 14.0301 Word Processing
- 14.0400 Information, Communications Occupations
- 14.0500 Materials Support, Transporting, etc.
- 14.0600 Personnel Training
- *14.0700 Secretarial and Related Occupations
  - 14.0701 Legal Secretary
  - 14.0702 Medical Secretary
  - 14.0703 Stenographic
  - 14.0704 Technical Secretary
  - 14.0705 Court Reporter
- 14.0800 Supervisory and Administrative Management Occupations
  - 14.0801 Administrative Assistants
  - 14.0802 Budget Management Analysts
  - 14.0803 Clerical and Office Supervisors
  - 14.0804 Data Methods and System Procedures Analysts
  - 14.0805 Office Managers and Chief Clerks
  - 14.0806 Banking and Finance
  - 14.0807 Business Management Analysts
  - 14.0808 Para Legal Assistant
- 14.9900 Office Occupations, Other

TECHNICAL EDUCATION

- 16.1000 Engineering Technology
  - 16.1011 Aeronautical Technology (Aerospace)
  - 16.1012 Aircraft Maintenance (A and P)
  - 16.1013 Aircraft Maintenance - Airframe
  - 16.1014 Aircraft Maintenance - Powerplant
  - 16.1031 Architectural Technology
  - 16.1051 Chemical Technology
  - 16.1060 Natural Resources Management
  - 16.1061 Civil Technology
  - 16.1062 Concrete Technology
  - 16.1063 Surveying (Photogrammetry)
  - 16.1064 Heavy Construction Technology
  - 16.1065 Building Inspection
  - 16.1066 Urban Planning
  - 16.1067 Water/Waste-water Technology
  - 16.1068 Traffic Engineering
  - 16.1069 Environmental - Protection/Control
  - 16.1071 Electrical Technology
  - 16.1072 Commercial Industrial Electricity
  - 16.1081 Electronic Technology
  - 16.1082 Communications
  - 16.1083 Industrial Electronics
  - 16.1084 Radio-Television (Consumer Electronics)
  - 16.1085 Digital Electronics
  - 16.1091 Electromechanical Technology
  - 16.1092 Bio-Medical Technology
  - 16.1093 Vending Machine Repair
  - 16.1101 Environmental Technology (Heating, A/C & Refrigeration)
  - 16.1102 Cooling
  - 16.1103 Heating
  - 16.1104 Ventilating (Filtering and Humidification)
  - 16.1105 Air Conditioning, Other
  - 16.1121 Instrumentation Technology
  - 16.1131 Mechanical Technology
  - 16.1132 Fluid Power
  - 16.1133 Hydraulic Mechanics
  - 16.1134 Quality Control
  - 16.1135 Machining Technology
  - 16.1141 Metallurgical Technology
  - 16.1991 Engineering Related Technology, Other (Includes Blueprint Reading)
  - 16.1992 Drafting
  - 16.1993 Mining Technology
  - 16.1994 Technical Illustration
- 16.3001 Health-Related Technology
- 16.4001 Office-Related Technology
- 16.6001 Miscellaneous Technology
  - 16.6011 Pilot Training
  - 16.6012 Air Traffic Control
  - 16.6013 Aviation Occupations, Other
  - 16.6021 Fire and Fire Safety (Science) Technology
  - 16.6022 Fire Service Training
  - 16.6031 Forestry Technology
  - 16.6050 Criminal Justice
  - 16.6051 Police Science Technology (Law Enforcement)
  - 16.6052 Plant Security
  - 16.6053 Corrections (Institutions)
  - 16.6054 Safety Administration (Includes O.S.H.A. and/or C.O.S.H.)
  - 16.6990 Miscellaneous Technical Education
  - 16.6991 Audio Visual
  - 16.6992 Graphic Communications
  - 16.6993 Teacher Aide (Classroom Teacher Assisting)
  - 16.6994 Radio and Television Broadcasting
  - 16.6995 Ski Area Technology

TRADE AND INDUSTRIAL OCCUPATIONS

*NOTE: THIS CODE (17.0000) CANNOT BE USED IN ITEM #23 OF THE VE-135. LIST STUDENT'S SPECIFIC OCCUPATIONAL OBJECTIVE O.E. CODE IN #23.

- *17.0000 Industrial Cooperative Education (I.C.E.)
- 17.0200 Appliance Repair
- 17.0301 Body and Fender
- 17.0302 Mechanics
- 17.0399 Automotive Services
- 17.0600 Business Machine Maintenance and Repair
- 17.0700 Commercial Art Occupations
- 17.0830 Commercial Fishery Occupations
- 17.0900 Commercial Photography
- 17.1001 Carpentry
- 17.1002 Electricity (Electrician)
- 17.1003 Heavy Equipment Occupations (Construction)
- 17.1004 Masonry
- 17.1005 Painting and Decorating
- 17.1006 Heavy Equipment Mechanic
- 17.1007 Plumbing
- 17.1009 Glazing
- 17.1010 Roofing
- 17.1011 Manufactured Housing
- 17.1012 Mining Occupations
- 17.1099 Construction and Maintenance Trades (Combination), Other (Includes Blueprint Reading)
- 17.1100 Custodial Services
- 17.1101 Industrial Maintenance Occupations
- 17.1200 Diesel Mechanic
- 17.1401 Industrial Electrician
- 17.1402 Lineman
- 17.1499 Electrical Occupations, Other
- 17.1600 Fabric Maintenance Services
- 17.1700 Foremanship, Supervision and Management Development
- 17.1900 Printing Press Occupations, Graphic Arts Occupations, Graphic Arts, Other
- 17.2101 Instruments (Other than Watches and Clocks)
- 17.2102 Watchmaking and Repair
- 17.2302 Machine Shop
- 17.2303 Machine Tool Operation
- 17.2304 Metal Trades, Combined
- 17.2305 Sheet Metal
- 17.2306 Combination Welding
- 17.2307 Tool and Die Making
- 17.2308 Shoe Repair
- 17.2399 Metal Working, Other
- 17.2400 Metallurgy
- 17.2601 Barbering
- 17.2602 Cosmetology
- 17.2699 Personal Services (Equipment Operator)
- 17.2730 Plastics Occupations
- 17.2800 Bus/Truck Driving
- 17.2901 Baker
- 17.2902 Cook/Chef
- 17.2903 Meat Cutter
- 17.2904 Waiter/Waitress
- 17.2999 Quantity Food Occupations, Other
- 17.3100 Small Engine Repair, Internal Combustion
- 17.3200 Stationary Energy Sources Occupations
- 17.3300 Textile Production and Fabrication
- 17.3400 Leatherworking
- 17.3500 Upholstering
- 17.3601 Millwork and Cabinetmaking
- 17.3699 Woodworking, Other
- 17.3700 Gunsmithing
- 17.9900 Trade and Industrial Occupations, Other

SPECIAL PROGRAMS

- 02.0006 Career Exploratory
- 15.0000 Teacher Training
- 16.0100 Teacher Training EPDA
- 19.0000 Curriculum Development
- 20.0000 Administration
- 21.0000 Cluster Programs
- 22.0000 Mobile Unit Instruction
- 23.0000 C.V.A. Workshop
- 24.0000 Evaluation
- 25.0000 Credentialing
- 26.0000 Work Study
- 30.0000 Research
- 35.0000 Contract Programs
- 40.0000 Guidance
- 45.0000 Guidance and Placement
- 50.0000 Placement
- 60.0000 Disadvantaged
- 70.0000 Handicapped
- 80.0000 COOP-G
- 81.0000 Multi-Occupational COOP
- 90.0000 Exemplary
- 95.0000 Engineering and Science-Related Instruction
- 96.0000 Long Bill Amount

TYPE OF PROGRAM - SEVENTH CHARACTER IN PROGRAM CODE: (TYPE)

All programs must enter one of the following numbers for program TYPE:

- "0" Regular Programs
- "1" O.E. Programs and Multi-Occupational Programs
- "2" I.C.E. Programs
- "3" H.E.R.O. COOP Programs
- "4" Career Exploratory Programs
- "5" Handicapped Programs and/or Services -- Work Experience Study Programs (W.E.S.) and Supplemental Services Programs
- "6" Disadvantaged Programs
- "7" COOP G Programs
- "8" Adult Vocational Programs
- "9" Apprenticeship Programs

APPENDIX B - SECONDARY SYSTEM

APPENDIX C

EXAMPLE OF DATA USAGE FROM THE COLORADO STATE PLAN

APPENDIX C

DEVELOPMENT OF SECONDARY AND POSTSECONDARY PROGRAMS

The primary purpose for providing regular vocational program offerings is to prepare people for work. This implies a need for planning based upon knowledge of manpower needs. A great deal of effort has been placed upon preparation of worker demand and supply projections in Colorado. These span a five-year planning period from 1977 through 1982. It is the purpose of the State Plan to present a design for the allocation of resources which will modify vocational supply in light of other supply and worker demand. Obviously, there are many socio-political, economic, and other factors which cannot be controlled or forecast and as a result, adjustments will be made as necessary. Additionally, the State Plan includes a table which projects enrollments with a breakout by sex and race. This information presents a data base for statewide goals and provides a basis for goal setting at the local level for dealing with sex bias and stereotyping. Also, the Plan includes a table which displays program offerings. Both enrollment and program projections reflect demand and supply data in addition to other factors such as placement/completion rates, unemployment, school dropouts, and local economic conditions.

Predicted upon supply/demand projections, statewide needs for the five-year planning period are generally assessed as follows:

> Emphasis will be placed upon promotion of the development of programs in Distributive Occupations, Energy Occupations, Food Management, and Production Agriculture.
>
> The existing moratorium will be lifted from Commercial Art and Dental Assisting programs.

The probable success ratio is considered marginal in several program areas and therefore new programs will be approved only under exceptional local circumstances for Medical Lab Technician, Surgical Technician, Psychiatric Technician, Radio TV Repair, Fire Fighting, Police Science, Small Engine Repair, Air Conditioning, and Watch Making.

Moratoriums will be continued/initiated on new programs in the areas of Electro-Mechanical Technology, Mechanical Technology, Graphic Arts, Auto Services, Real Estate (Preparatory Sales only--does not include Related Occupations), Key Punch, Electronic Technology, Electrical Technology, Aircraft Mechanics, Body and Fender Repair, Auto Mechanics, Drafting, Welding and Commercial Pilot Training.

Additionally, local administrators of vocational education will be encouraged to thoroughly evaluate existing programs in the marginal success ratio and moratorium categories in an effort to discontinue weak programs.

A review of program development projected over the five-year planning period, by generic areas, and by secondary and postsecondary levels, lists as follows:

In the Agriculture area, ten secondary Agriculture Production programs will be initiated. A modest start will occur in 1977-78 when two new secondary Agriculture Production programs will be developed. One postsecondary Agriculture Mechanics program will be initiated in the late 1970's. Although Mechanics Occupations are oversupplied in Colorado, there will be jobs available for Mechanics in this specialized area.

Distributive Education is an area where there will be a great deal of activity over the next five years. Ten secondary specialty programs will be started including three Apparel and Accessories programs, one Automotive program, two Finance and Credit programs, one Hardware and Building Materials program, two Home Furnishings programs, and one program yet to be determined. In addition, twelve secondary Cooperative programs will be started in Distributive Education. During the 1977-78 school year, five secondary Distributive programs will be developed as a start towards this ambitious goal. At the postsecondary level new Distributive programs will include one Apparel and Accessories program, one Industrial Marketing program, two Insurance programs, one Personal Services program, one Recreation and Tourism program, two Transportation programs, and five Marketing Management programs. The 1977-78 school year will see three new postsecondary programs.

In the Health area, the next five years will be spent in consolidating Colorado's existing programs with two exceptions. Two associate degree Nursing programs will be initiated in remote areas. Although there is no forecasted shortage of nurses statewide in Colorado, several rural areas continue to have difficulty recruiting nurses. The proposed programs will be small and designed to serve a specific geographic need. Ultrasonic Technician looms as a new occupation.

In light of the critical societal needs relating to the home and family, we anticipate an increased need for vocational Consumer and Homemaking Education at the secondary level. Therefore, there are a minimum of 25 new programs projected for development in the State over the next five years.

In secondary wage earning Home Economics, two new Care and Guidance of Children programs, two new Apparel Production programs, seven new Home Economics Cooperative programs, and eight new Food Management and Production programs are projected. At the postsecondary level, one new Apparel Production program and thirteen new Food Management programs are projected.

There are only minor changes anticipated in the number of Business and Office programs during the next five years, since this demand is relatively well met. Five secondary Clerical programs are projected to accommodate students in new schools.

Energy Occupations surface as a prominent thrust in Technical, Trade and Industrial Education. Fifteen Energy programs are projected to be developed at the postsecondary level. Four new postsecondary Photo Processing programs, one new postsecondary Custodial and two new secondary Carpentry programs are planned. Also, two new Stationary Energy programs, one new secondary and eight new postsecondary programs for Emerging Occupations are planned for development. Few other changes are anticipated over the next five years.